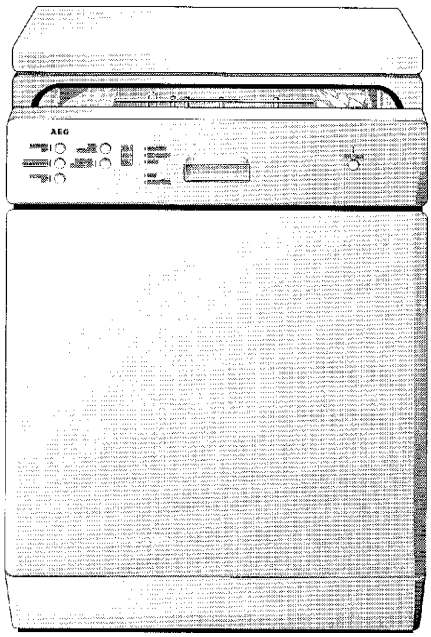
Electrolux
Spares Operation

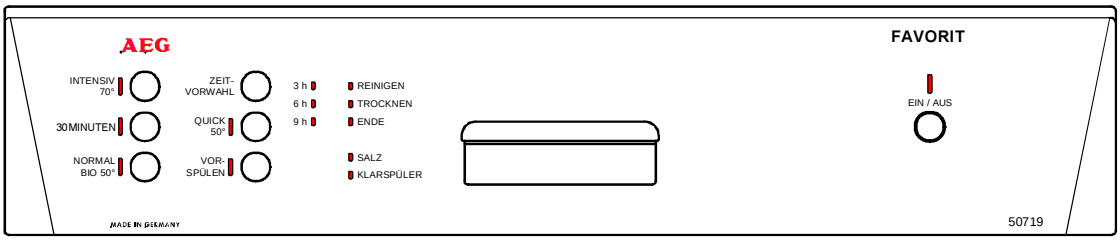
SERVICE MANUAL

DISHWASHER

DIVA

+ EDW 1100





Geschirrspüler

DIVA

+

EDW 1100

Muggenhofer Straße 135
D-90429 Nürnberg
Germany

Fax +49 (0)911 323 1022

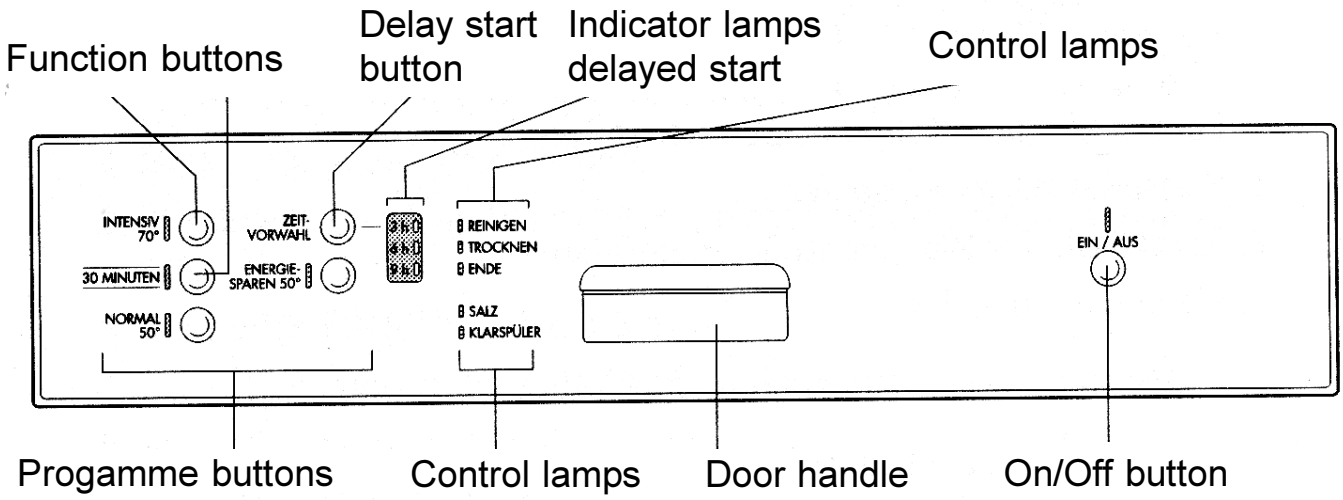
Spares Operation

Ausgabe: 05.03
R.Kurzke

Publ.-Nr.:
599 517 066
EN

Index

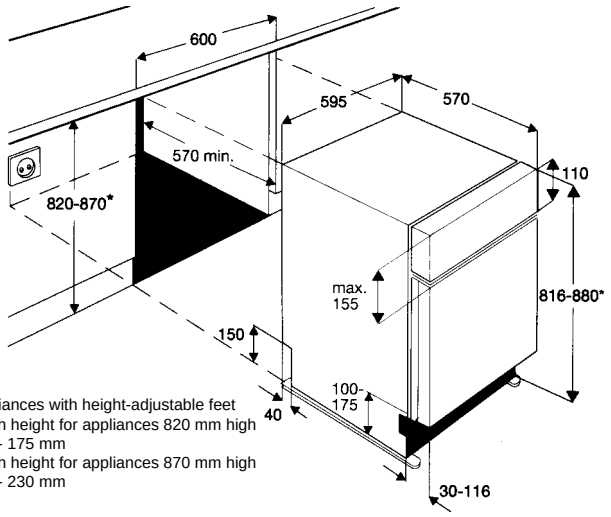
1. Control panel



2. Dimensions

Build-in dimensions for Integrated Dishwashers

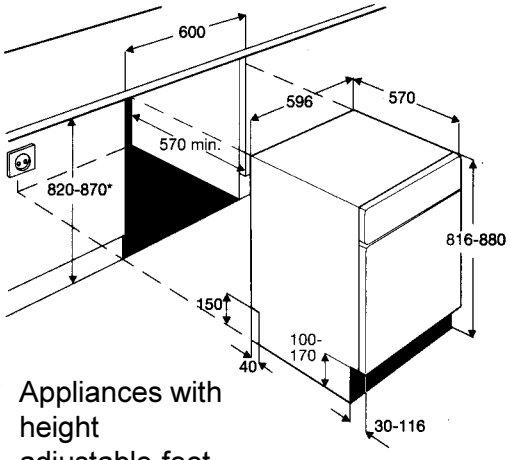
ÖKO-FAVORIT



* Appliances with height-adjustable feet
Plinth height for appliances 820 mm high
100 - 175 mm
Plinth height for appliances 870 mm high
150 - 230 mm

Build-in dimensions for Built-Under Dishwashers

ÖKO-FAVORIT



* Appliances with height adjustable feet

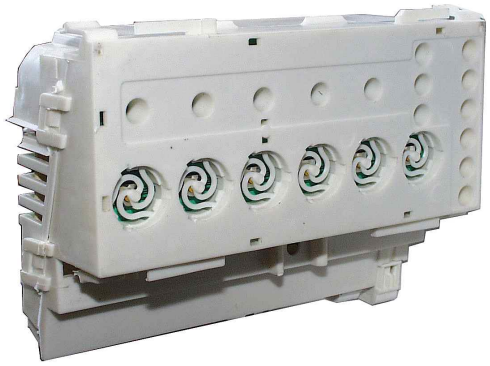
Dimensions for Freestanding Dishwasher

Height 85 cm
Width 60 cm
Depth 60 cm

Height with worktop removed 82 cm
Feet adjustment 1 cm

3. Components

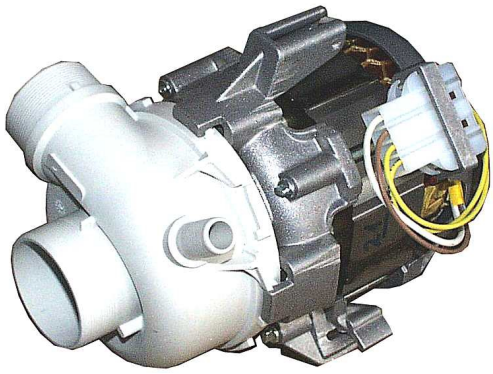
3.1 Electronic



On electronic models, a micro processor controls all components, this is done using triacs. The electronic also memorizes all programme data.

The heating is switched by a relay on the electronic board.

3.2 Circulation Pump



The circulation pump is driven by an asynchronous motor with an auxiliary winding. The auxiliary winding ist in circuit with a 3 mF capacitor. A tacho generator is used for speed control. There are three speeds for rinsing.
2800 1/min, 2200 1/min, 1900 1/min, 1700 1/min, 1600 1/min,
Power output 50 W.

Resistances	
Main winding	45 - 55 Ohm
Support winding	110 - 140 Ohm
Tacho	ca. 220 Ohm

3.3 Drain Pump

The drain pump is driven by a synchronous motor.

Power output 26 W.
Pump rate 15 l/min.

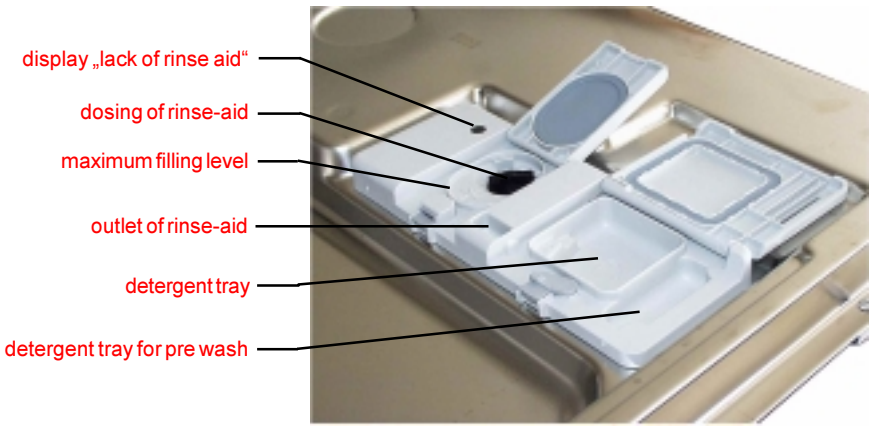
3.4 Flow Heater

The flow heater heats the water to the required temperature. During the wash cycle, water is contantly passing through the flow heater.

Power output	2000 W
Resistor	25 Ω
Protector	98 °C ± 5 K
Thermal fuse	260 °C

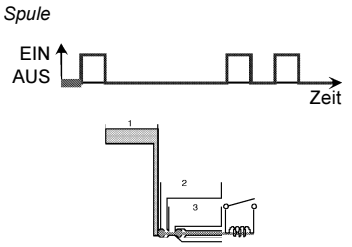
3.5 Detergent dispenser

Dosing of detergent
prewash 10 ml
wash 20 - 30 ml
Dosing of rinse aid
position 1 - 6 2 ml - 7 ml
Capacity
140 ml

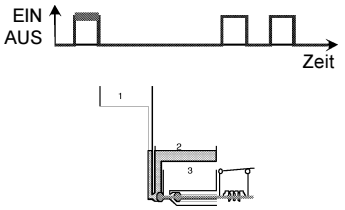


coil

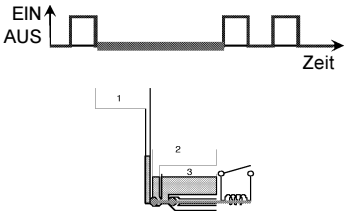
The detergent compartment 1 is filling corresponding to the set dosing quantity when the door is open. Possibly existing rinse-aid in compartments 2 and 3 flows back into the storage tank of the rinse-aid. The detergent trays are filled up. The door will be closed and the detergent for prewash will be rinsed out through the slots in the detergent dispenser cover.



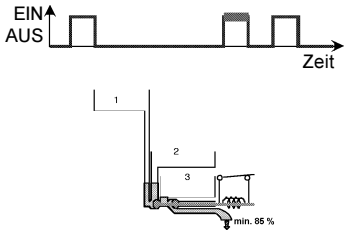
During the washing cycle the coil is switched on and the detergent compartment cover releases the detergent. The rinse-aid flows from compartment 1 into compartment 2.



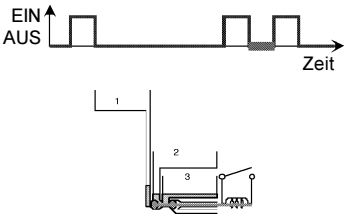
After switching off the coil, the rinse-aid flows from compartment 2 into compartment 3.



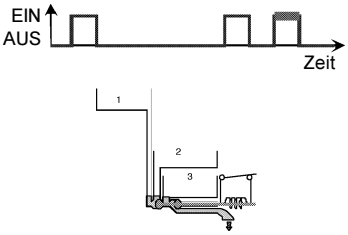
During the rinse cycle, the coil will be switched on when the rinse is warmed and the rinse-aid runs from compartment 3 into the rinse tank. At the same time, the remaining rinse-aid (15 %) runs from compartment 1 into compartment 2.



With the coil switched off, the rinse-aid flows from compartment 2 into compartment 3.



During the rinse cycle, the coil is always switched on twice. When it is switched on the second time, the remaining rinse-aid flows into the rinse tank.



3.6 NTC-Temperature Sensor

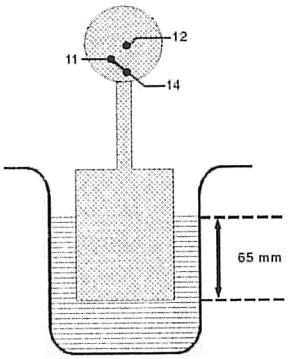
Temp.	Resistor
10°C	9653 Ohm
25°C	4843 Ohm
60°C	1204 Ohm
90°C	445 Ohm

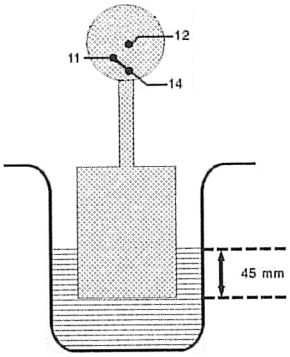
3.7 Pressure Switch

The pressure switch controls the water level.
Without water, contact 11 - 12 is closed.

fN	Switch point with level	65 mm Ws
	Reset point with level	45 mm Ws

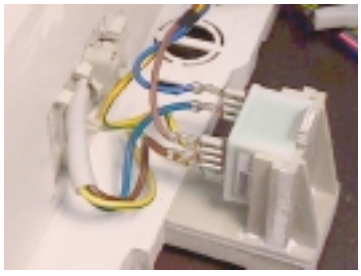
The pressure switch is not adjustable.

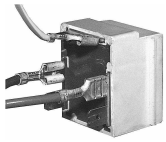


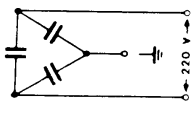


3.8 Interference Filter

The interference filter is connected in the terminal board parallel to the mains feed.







3.9 Spray arms

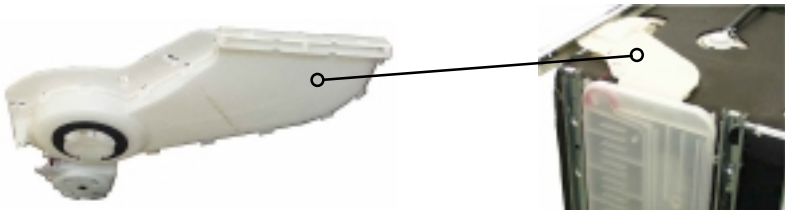
Celling spray arm

upper spray arm

lower spray arm

3.10 Drying

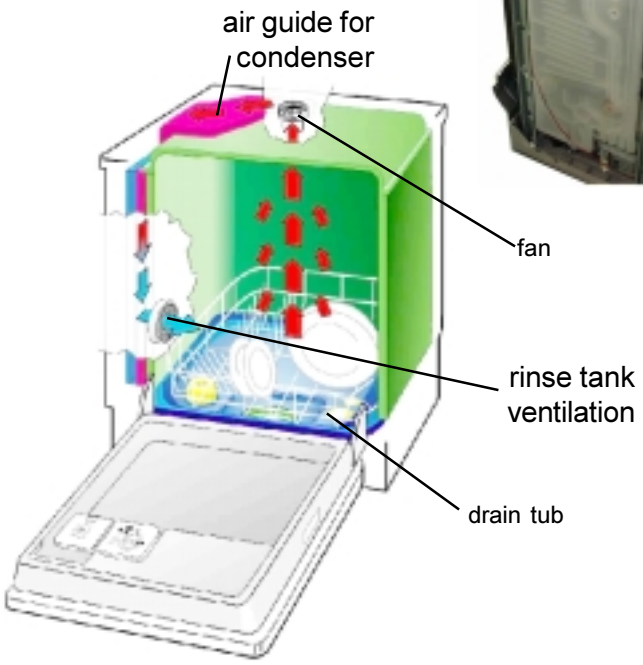
The new drying fan is located at the top on the rinse tank.



Function mode of the condensing drying

Rinse tank, fan and regenerating dosing with condenser form a closed circuit. The humid air is sucked from the top of the rinse tank and blown through an air guide between rinse tank and regenerating dosing. Thereby the air gets dry and the condensate is guided to the drain tub.

The dry air gets through the rinse tank ventilation into the rinse tank. During the drying phase, the condenser is additionally cooled with 1 liter of water.



Active Drying

Active Drying means the ventilation of a container without any movable parts
A plastic container is clipped into the opening in the container cover, from where a hose is passed to the appliance base.

Function

A small quantity of moist air and some condensate emerge from the hose. The condensate is collected in the base side sections where it will evaporate.
If a larger quantity of condensate should be present (due to many subsequent programme cycles) the hose end will be immerged, thus stopping both the convection and the condensating process in the hose.
Flooding of the sections is therefore excluded. Only very little moist air will be present.

3.11 Regenerating dosing with condenser

With every filling step, the condenser cools down due to the cold incoming water. Therefore another 1 liter of water is required during the drying cycle.

1. softener unit
2. regeneration dosage chamber

3.11.1 Water softening/regeneration

The water softening can be adjusted in 10 levels. The incoming water flows until positon 5 to 85 % through the softener which works according to the ion exchange principle. The ion exchanger is filled with small epoxy resin balls. The resins exchange the hardness constituents (calcium and magnesium), for sodium ions.

When all the sodium ions are used up, it is necessary to regenerate the softener. This is done by flushing a brine solution through the softener.

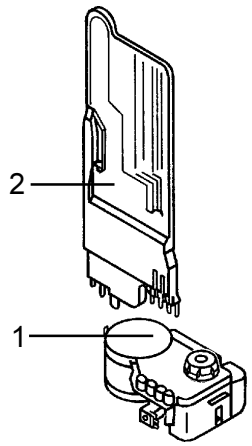
Afterwards the softener is washed out with fresh water and is now fully effective.

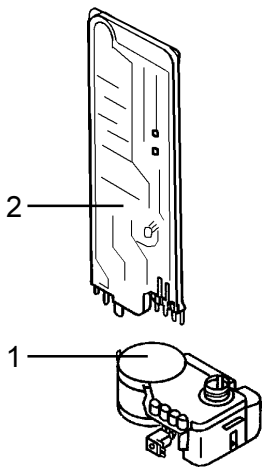
Depending on the water hardness, regeneration is only necessary after several wash cycles.

The remaining 15 % of water flow through the rinse tank ventilation directly into the appliance.

From setting of level 6, the whole water flows through the softener. For this purpose you also have to set mechanically from 0 to 1 with the regenerating dosing.

With the setting of level 9, it is additionally regenerated after the washing in a rinse cycle. With the settings 1 to 8, it is regenerated after the final rinse depending on need. The softening system is designed for a water hardness of up to 70 °dH.



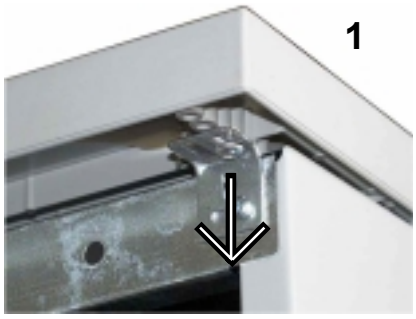


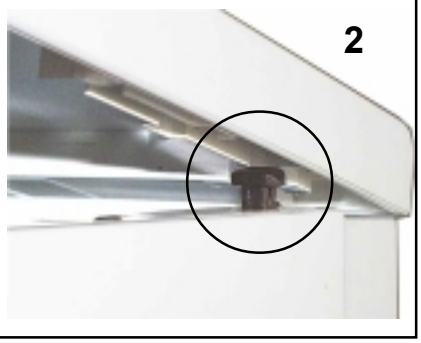
4. Service tips

4.1 Open the housing

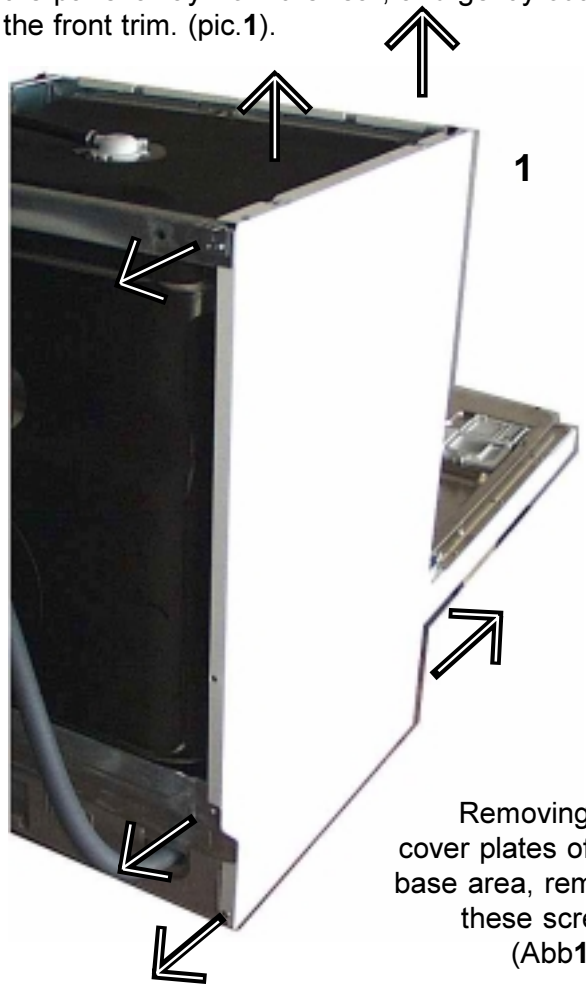
Remove the screws (Abb.**1**) of the upper plate on the left and right side.

Push the upper plate in front direction to remove the plate (Abb.**2**).

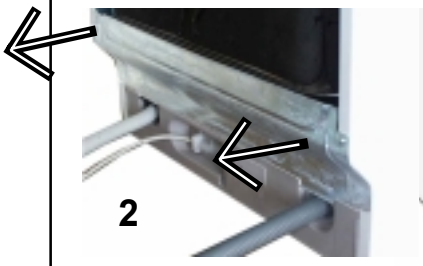




To remove side panel remove fixing screws, pull the panel away from the rear, and gently out of the front trim. (pic.**1**).



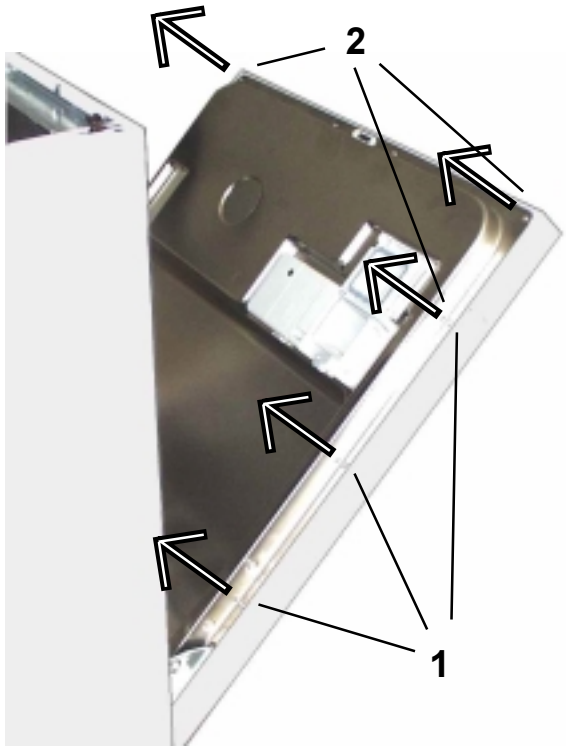
Removing the cover plates of the base area, remove these screwst (Abb**1**+**2**).



You need
Torx epuipment

Remove the screws (**1**) to pull the outer door away.

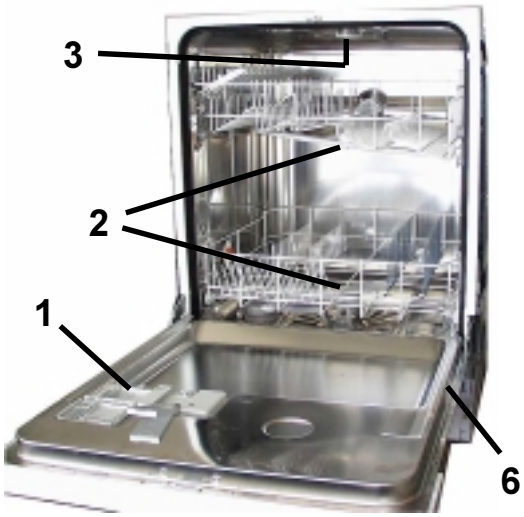
To remove the panel, remove the fixing screws (**2**) .



4.2 Position of Components

Detergent dispenser (**1**)
Spray arms (**2**)
Roof-mounted shower (**3**)
Salt container (**4**)
Filter (**5**)

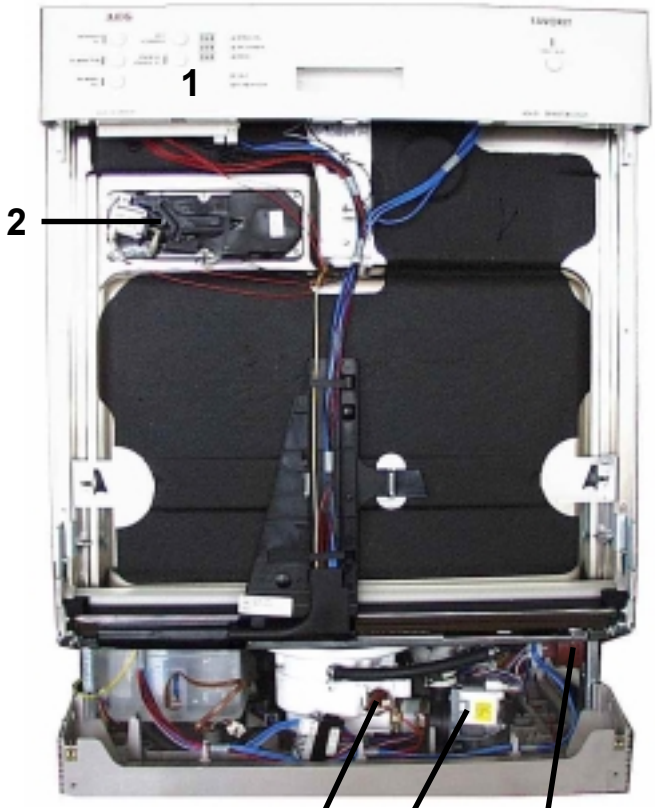
Type plate (**6**)



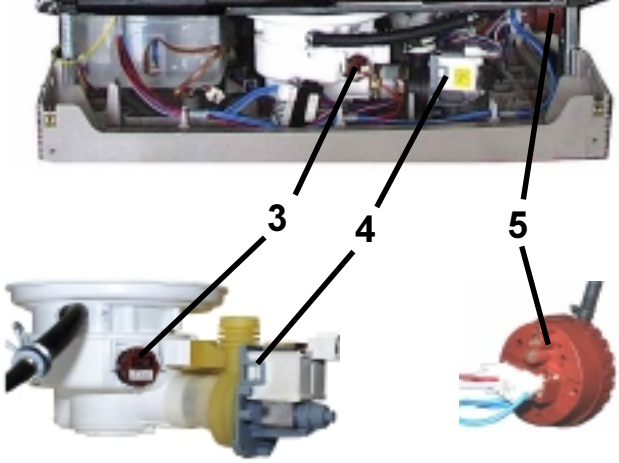
On/Off-Switch (**1**)
Electronic (**2**)

Electronic
Panel (**1**)

Detergent dispenser (**2**)



Thermal sensor (**3**)
Drain pump (**4**)
Pressure switch (**5**)

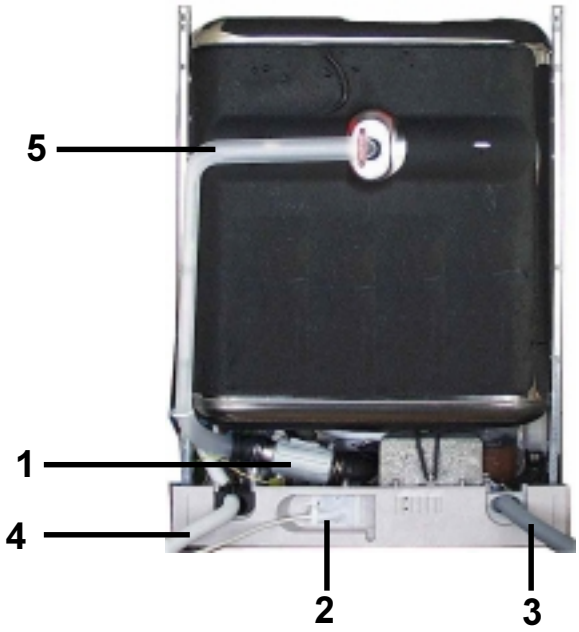


Back side view

- Flow heater (**1**)
- Terminal box (**2**)

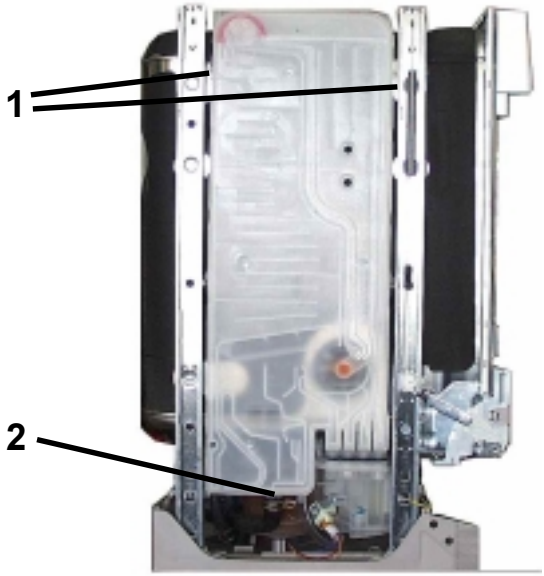
- Inlet hose (**3**)
- Drain hose (**4**)

- Water inlet for above spray arm (**5**)



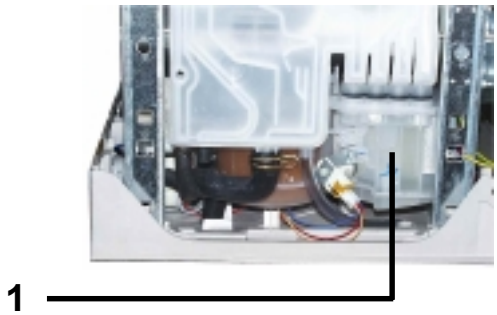
Removing the detergent dosage chamber:

- disengage locking tabs (**1**), disconnect hoses (**2**)
- holding the top of the chamber, pull upwards disengaging it from the softener.



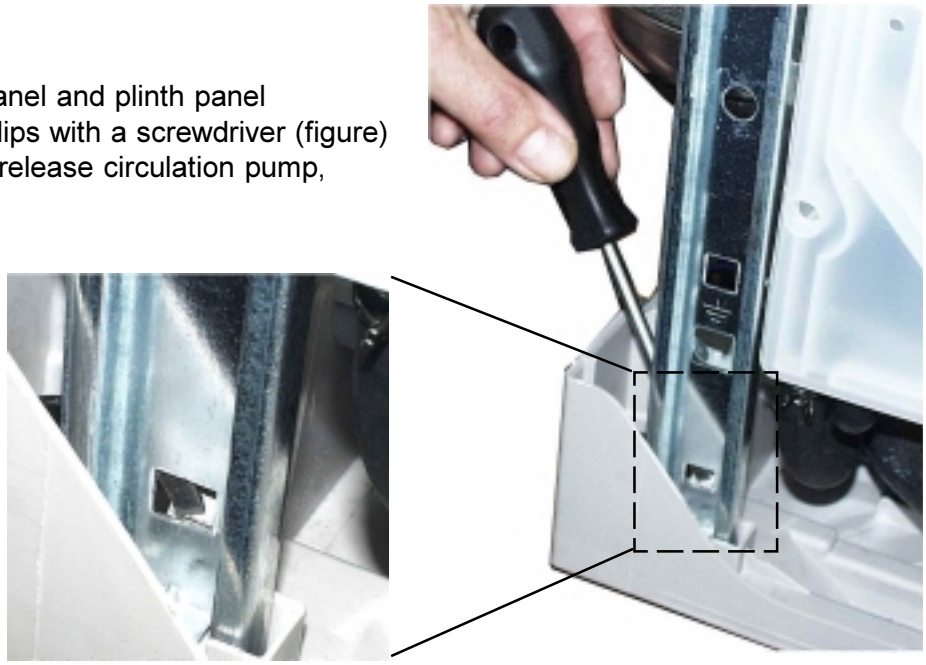
Removing the softener unit :

- remove the securing nut located under the salt cap.
- press softener (**1**) down and remove it through the front from the base area
- CAUTION if accessible release reed switch.



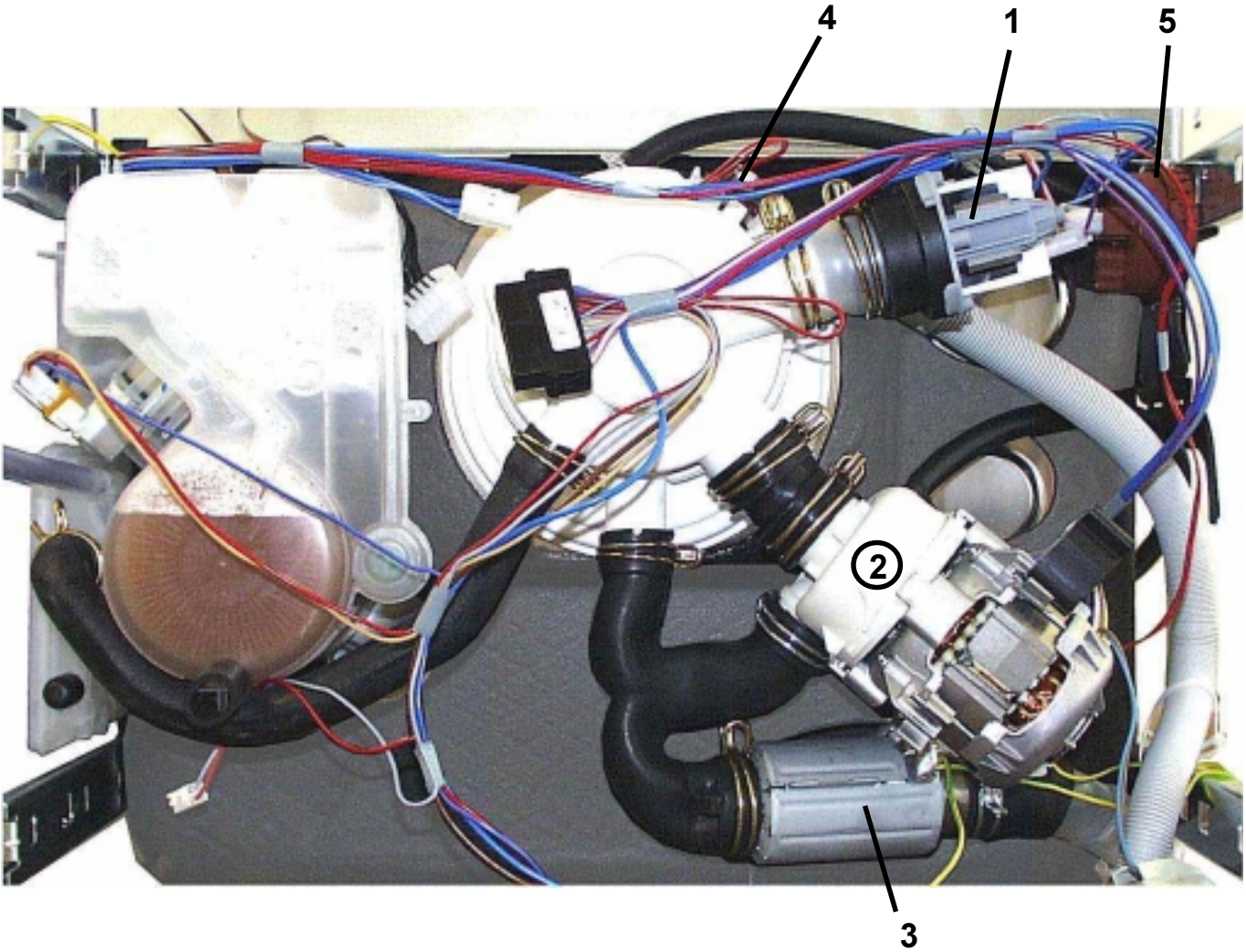
Removing the base :

- remove side panels, rear panel and plinth panel
- gently release base fixing clips with a screwdriver (figure)
- take off base carefully and release circulation pump, electronic and heater relay
- disconnect the float switch

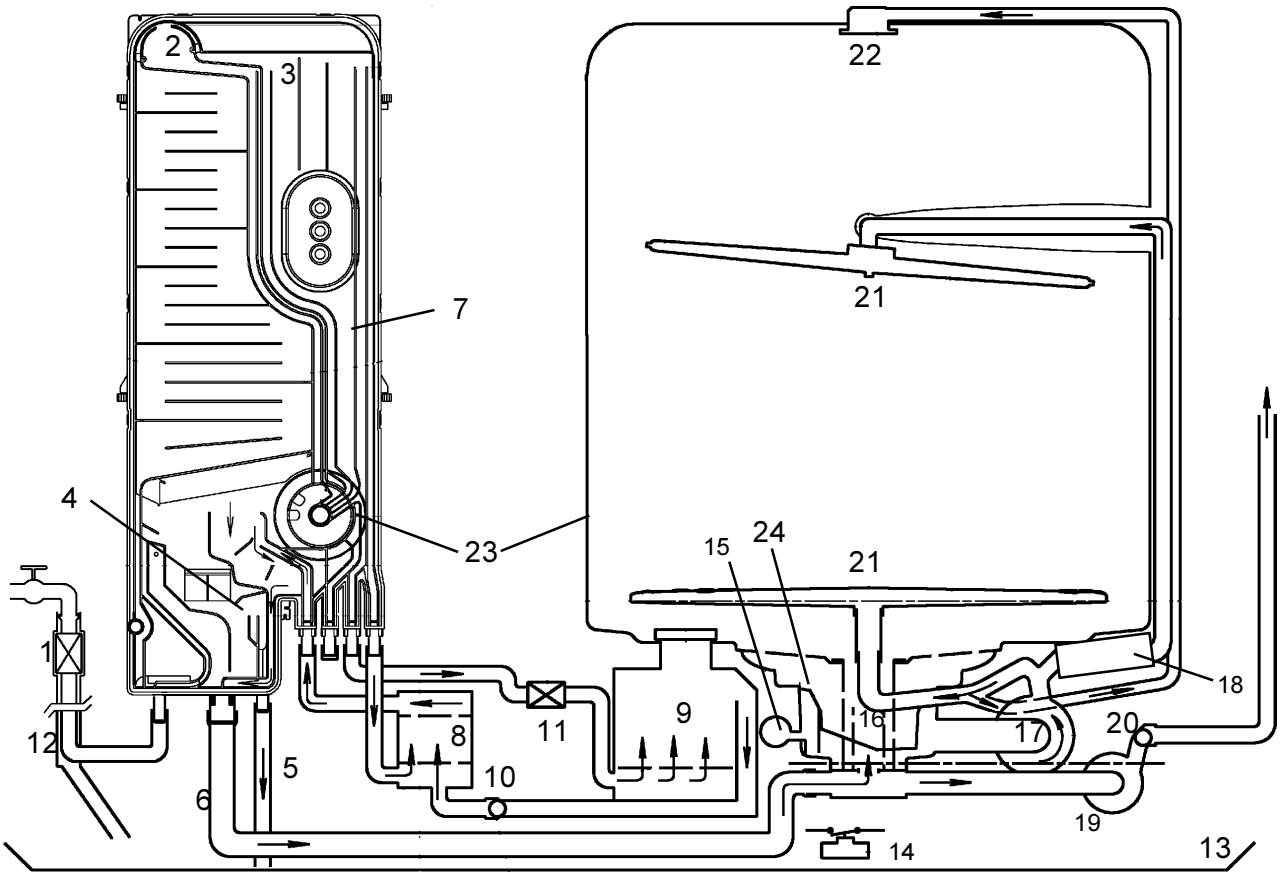


With base removed, following components are accessible:

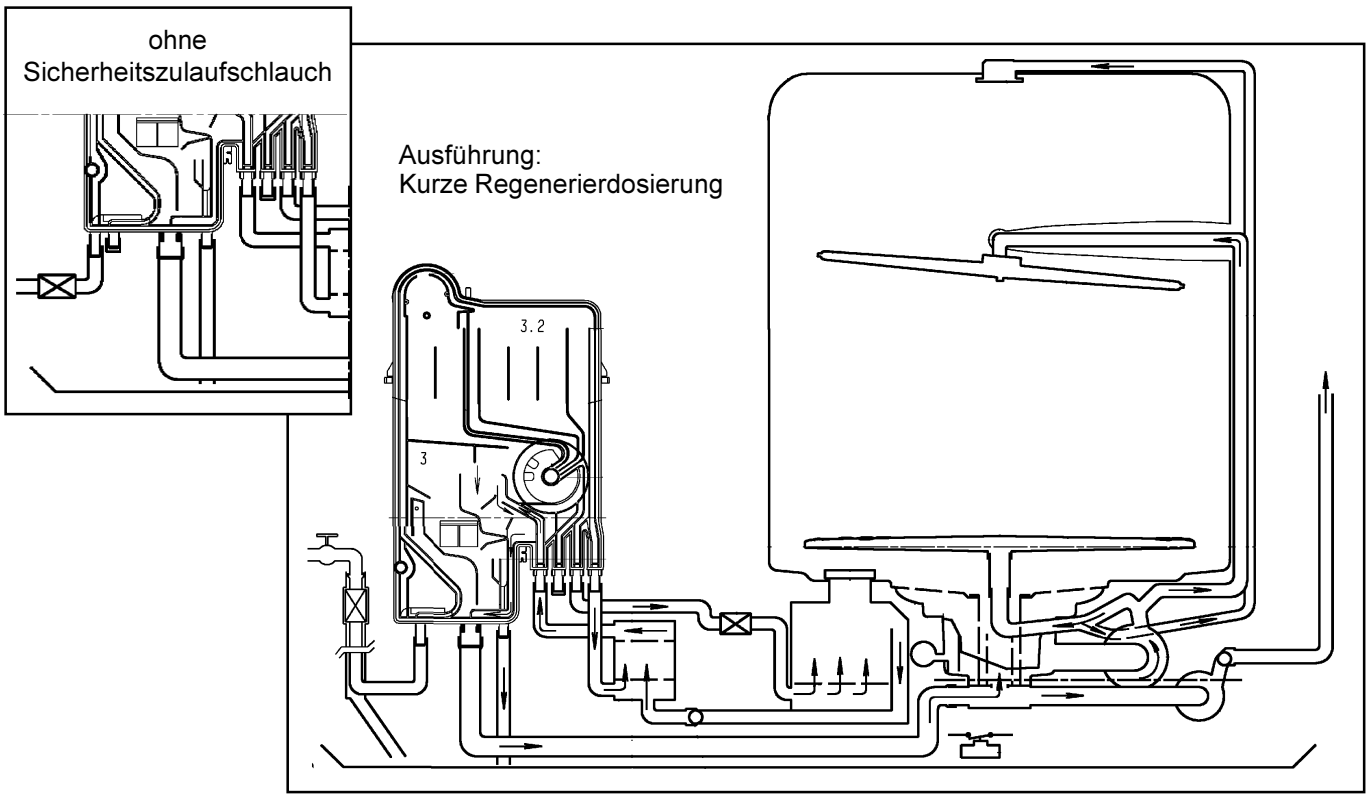
- Drain pump (1)
- Circulation pump (2)
- Flow heater (3)
- Temperature sensor / Turbidity sensor (4)
- Pressure switch (5)



5. Water Course Scheme



1	Inlet valve	10	Non-return valve salt container	18	Flow heater
2	Air break	11	Regeneration valve	19	Drain pump
3	Regeneration water dosage	12	Safety inlet hose	20	Non-return valve
4	Overflow safety level	13	Base tray	21	Spray arms
5	Safety overflow	14	Float switch	22	Roof-mounted shower
6	Inlet to sump from regeneration dosage chamber	15	Pressure switch	23	Tub vent
7	Regeneration dosage chamber	16	Filter	24	Sump assembly
8	Softener	17	Circulation pump		
9	Salt container				



5.1 All-Around Water Protection

Aqua-Control Inlet Hose

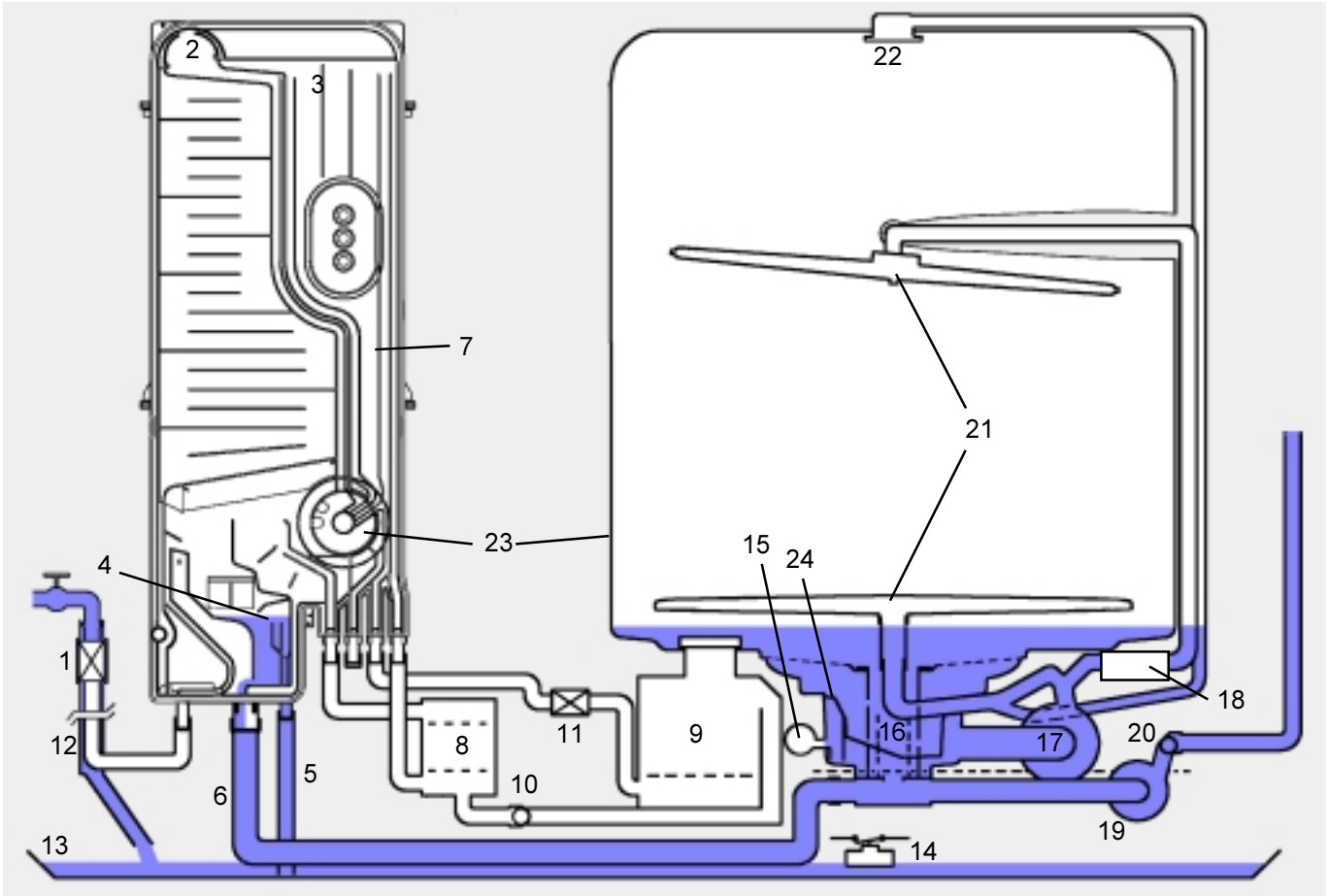
The inlet hose has a double-wall construction. The inner hose is equipped with a flow restrictor built into the tap connection, and has a flow rate of 4 litres per minute. The inlet valve (1) is located in the base of the dishwasher. The safety outer hose (12) is connected to the regeneration chamber. If the inner hose should burst, the water passes into the tub. The safety pressure switch activates the drain pump and decreases the waterlevel down to „normal“ level. An additional overflow protection is a defined overflow through the regeneration chamber. The water flows into the bottom tray and activates the float switch, which energises the drain pump. This drains the dishwasher preventing water damage.

Safety level

If the safety level is reached by over-fillling, the safety pressure switch starts the drain pump. The water is only drained until it has reached the normal level because the reset point of the safety pressure switch is above the switchpoint of the normal pressure switch.

Leakage Protection

The anti-flood switch in the base tray will activate the drain pump and drain the water from the tub in the event of an internal leakage. If the float switch is activated, all electric components are switched off except the electronic and the drain pump.

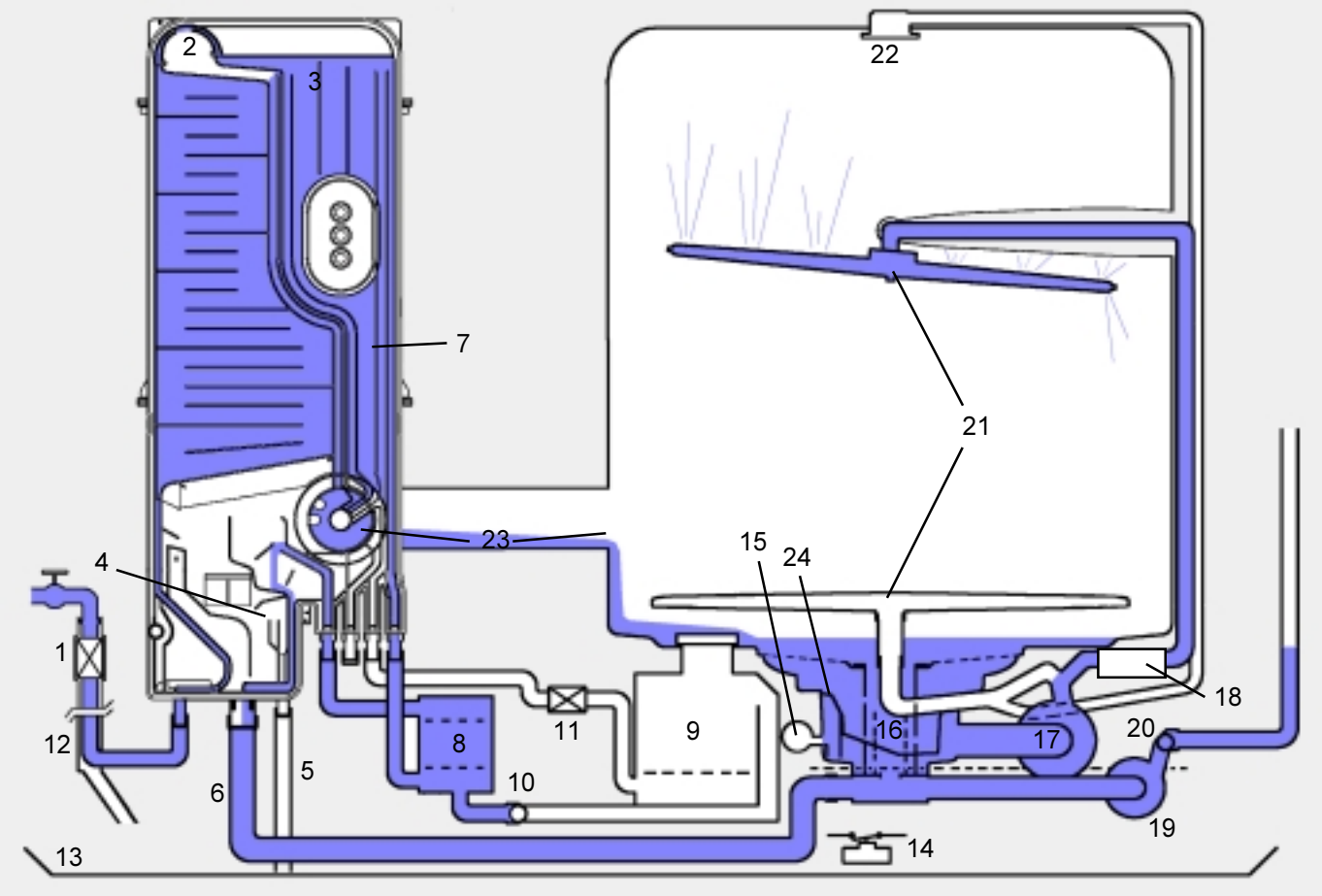


1	Inlet valve	10	Non-return valve salt container	18	Flow heater
2	Air break	11	Regeneration valve	19	Drain pump
3	Regeneration water dosage	12	Safety inlet hose	20	Non-return valve
4	Overflow safety level	13	Base tray	21	Spray arms
5	Safety overflow	14	Float switch	22	Roof-mounted shower
6	Inlet to sump from regeneration dosage chamber	15	Pressure switch	23	Tub vent
7	Regeneration dosage chamber	16	Filter	24	Sump assembly
8	Softener	17	Circulation pump		
9	Salt container				

5.2 Water Inlet

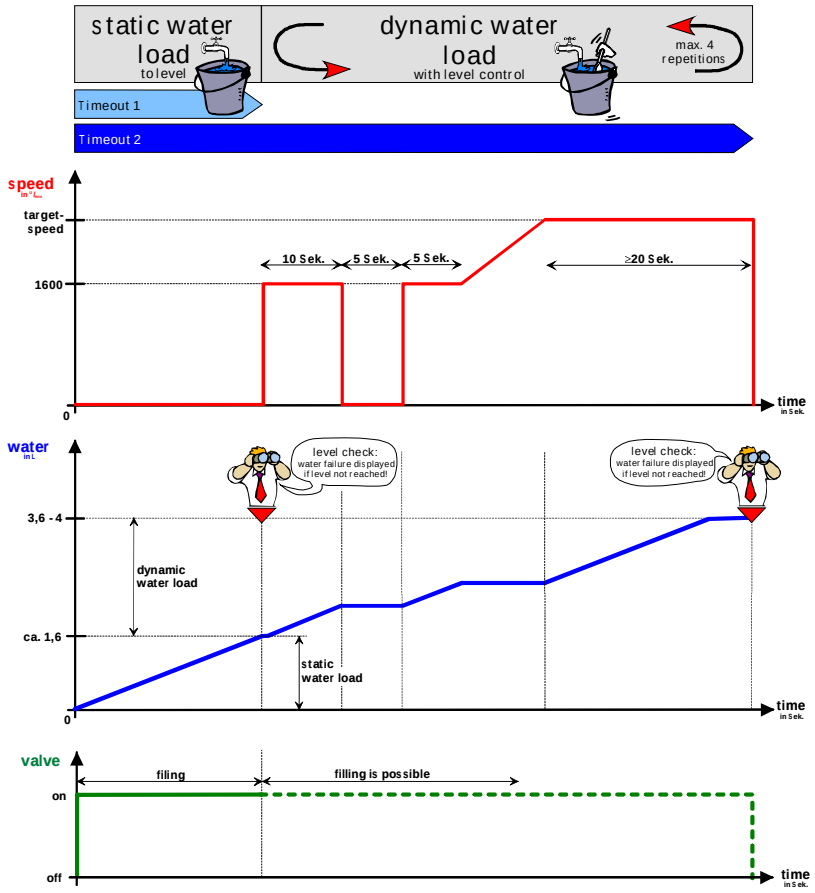
The water flows into the regeneration dosage chamber (7) via inlet valve (1), over air break (2), into regeneration dosage chambers (3) into softener (8). At this point the water divides. 1/4 of the water enters the tub through the vent (23). 3/4 of the water enters the sump (24) through hose (6).

The level control chamber built into the sump operates the pressure switch (15).



1	Inlet valve	10	Non-return valve salt container	18	Flow heater
2	Air break	11	Regeneration valve	19	Drain pump
3	Regeneration water dosage	12	Safety inlet hose	20	Non-return valve
4	Overflow safety level	13	Base tray	21	Spray arms
5	Safety overflow	14	Float switch	22	Roof-mounted shower
6	Inlet to sump from regeneration dosage chamber	15	Pressure switch	23	Tub vent
7	Regeneration dosage chamber	16	Filter	24	Sump assembly
8	Softener	17	Circulation pump		
9	Salt container				

5.2.1 Water load steps (Example)



Static filling

- Static filling until pressure switch point.
  failure code:
  If this point isnt reached after max. 2 minutes (Timeout 1), a failure code is displayed and the program is stopped. The program phase display PPD-LED LD9 is blinking.

● LD9
○ LD10
○ LD11

Dynamic filling

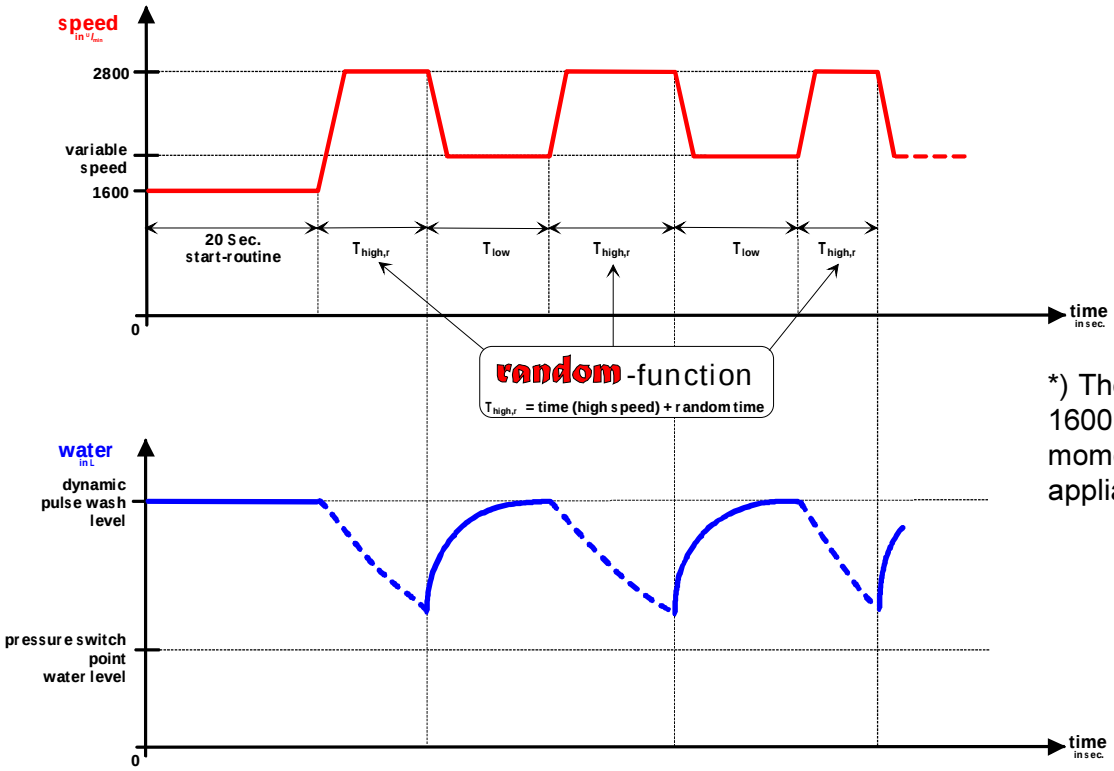
- 10 seconds filling at reduced circulation pump speed
- 5 seconds pause
- 10 seconds filling at reduced circulation pump speed
- filling with increasing circulation pump speed. As soon as the target speed has been reached, it is filled up to the pressure switchpoint.
  Failure code:
  If this dynamic switchpoint isn't reached within total 4 minutes (Timeout 2), the dynamic filling can be repeated 3 times. Only after non-successful repeating 3 times, a failure code is displayed and the program is stopped. The PPD-LED LD9 is blinking.

● LD9
○ LD10
○ LD11

*) The target speed is dependent on the subsequent pulse wash.

pulse wash	pulse 2800 1/min	Pause 1600 1/min	target speed in dynamic filling
1	0,9 sec	4,5 sec	2200 1/min
2	0,6 sec	3 sec	1900 1/min
3	0,3 sec	1,5 sec	1700 1/min

New pulse wash with „random“ functionality



*) The variable speed is 1600 1/min at the moment and equal to all appliances.

Random-function

$$T_{high,\,r} = T_{high} + T_r$$

$$T_{low} = T_{high,\,r} + \text{Ratio}$$

$T_{high,r}$ = time for high speed (calculated with random funktion)
T_{high} = time for high speed (cycle definition)
T_r = random time
T_{low} = time for low speed
Ratio = factor for low speed (eeprom definition)

Circulation

The circulation pump (17) pumps the water simultaneously into the ceiling shower (22) and into both spray arms (21). The water is filtered in the sieves (16) and led to the circulation pump.

Function of the new pulse wash with “random” functionality

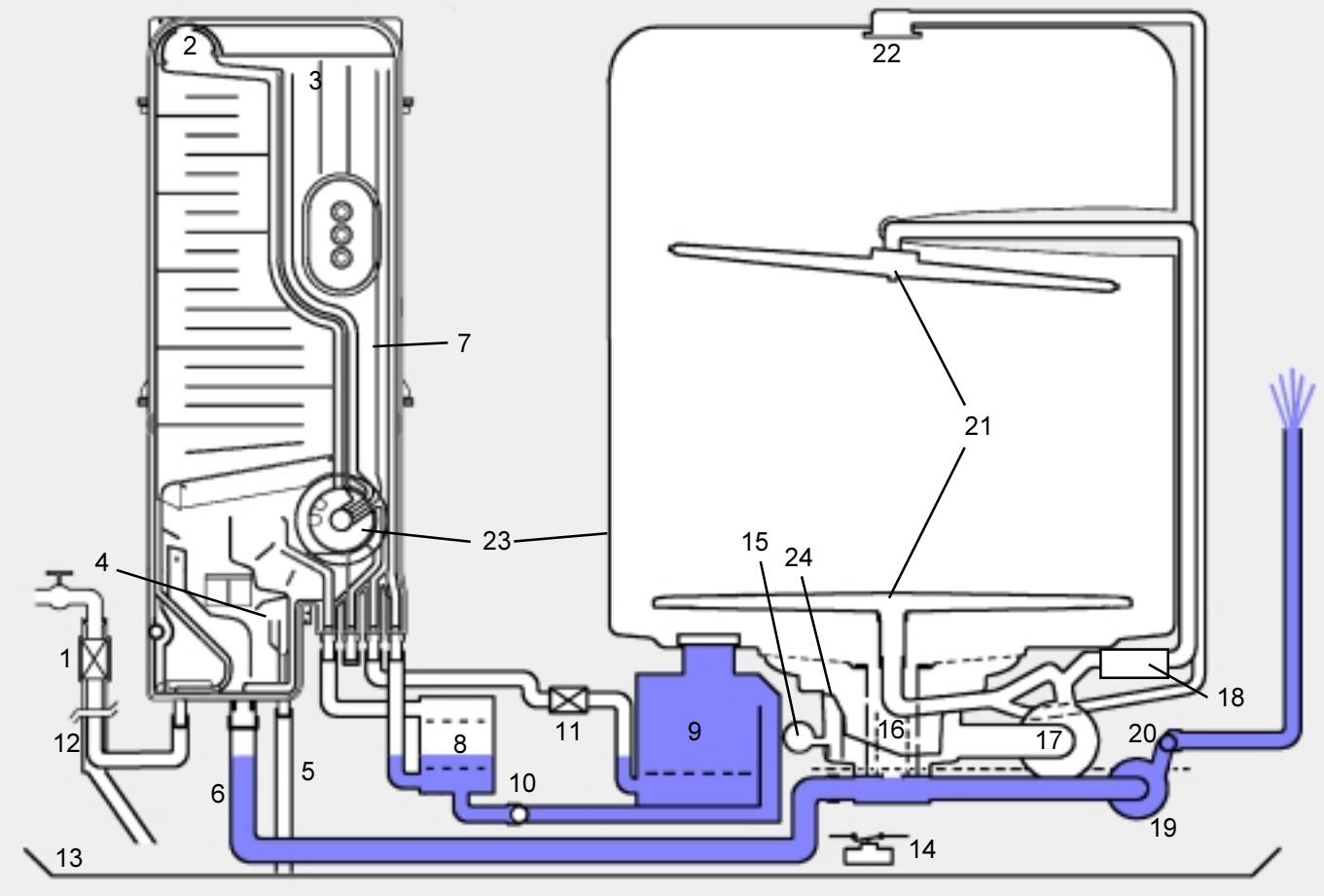
After the filling steps, the circulation pump is running at two rotational speeds.

Pulse Wash	Pulse time 2800 1/min		Pause 1600 1/min		Use with Wash Cycles
	Definitive Time	+ Random Time	Definitive Time	+ Random Time	
1	0.9 sec	0 - 0.3 sec	4.5	0 - 1.5 sec	prewash intensive
					wash intensive
2	0.6 sec	0 - 0.3 sec	3	0 - 1.5 sec	wash and intermediate wash
					prewash normal
3	0.3 sec	0 - 0.3 sec	1.5	0 - 1.5 sec	rinse

The ratio of pulse time and pause is always 1 : 5.

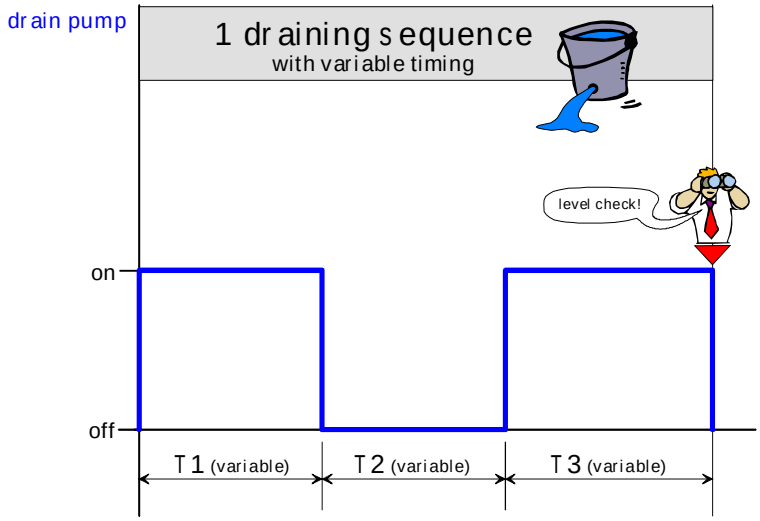
5.3 Draining

During the wash cycle the water is pumped out at various stages. First the draining water cleans the filters (16). The filters are open at the bottom which allows any soilage to be rinsed off sufficiently. There is a non-return valve (20) at the inlet connection to the drain pump (19). This valve prevents the water



1	Inlet valve	10	Non-return valve salt container	18	Flow heater
2	Air break	11	Regeneration valve	19	Drain pump
3	Regeneration water dosage	12	Safety inlet hose	20	Non-return valve
4	Overflow safety level	13	Base tray	21	Spray arms
5	Safety overflow	14	Float switch	22	Roof-mounted shower
6	Inlet to sump from regeneration dosage chamber	15	Pressure switch	23	Tub vent
7	Regeneration dosage chamber	16	Filter	24	Sump assembly
8	Softener	17	Circulation pump		
9	Salt container				

Sequence draining with pressure switch level check



Drain Cycle	T1	T2	T3
First draining before every wash cycle	45 sec	15 sec	20 sec
Draining after the wash cycles	30 sec	20 sec	10 sec

New draining with sequence draining

- The draining step contains of 3 time sequences.
  In the middle sequence, during time T2 the drain pump is stopped.

- At the end of the drain step, the water level is checked.

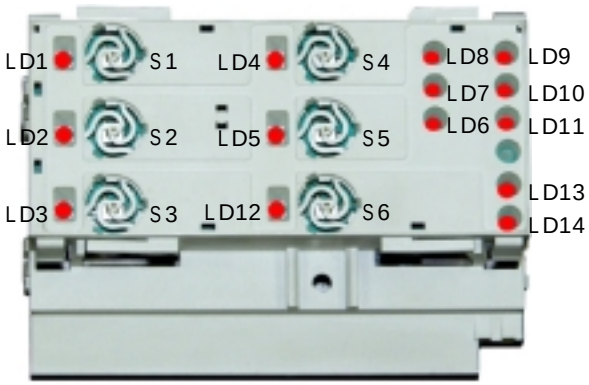
- If the switch back is reached, the drain step is terminated.
  If the switch back isn't reached, the drain step is repeated.

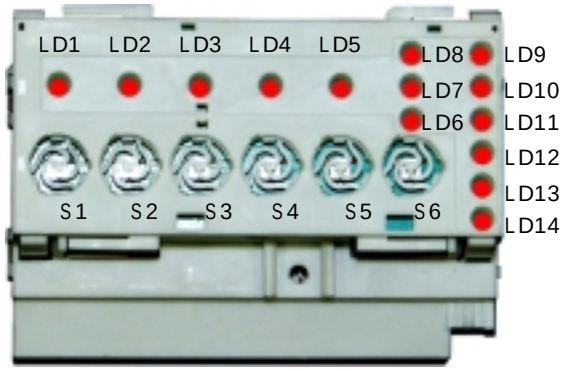
- A failure code is displayed, if after 2 drain steps, the switch back couldn't be reached.
  In this case, the program is stopped and PPD-LED LD10 is blinking.

  ○ LD9
  ● LD10
  ○ LD11

6.1 Inputs and outputs: keys, LEDs and lamps

Arrangement and designation





S0 - ON/OFF key

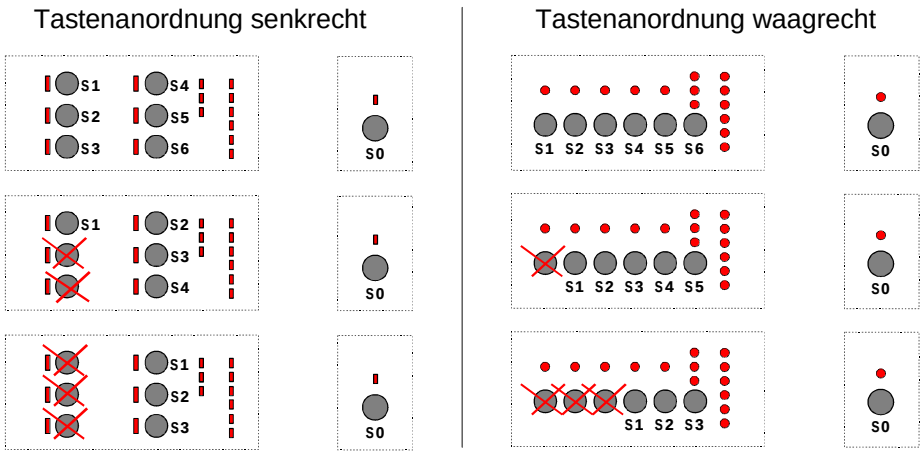
LD0 - Lamp ON/OFF

Designations in case of lower assembly of buttons

Due to appliance definition, it is possible that one or several of the keys are not assembled.
In this case counting starts (from the left) as from the first existing key, skipping the keys, which are not assembled.

This documentation for an appliance always assumes the full assembly of keys!

Lower assembly should be considered especially with customer and service functions and also with the “Reset” function,



6.2 **General**

• Equipment in panel area::

Possible Equipment:

- Separately arranged ON/OFF key S0
- 6 keys S1 to S6 for selection of programs or options mit zugehörigen LED's.
  All keys can be freely assigned without restriction due to programming of the model at issue
- 6 LE's (LD7 to LD12) for SZV, PAA etc.

Absolutely necessary minimum equipment:

S0 button (ON/OFF) and at least 3 program and/or option buttons with associated LEDs as well as the END LED.
The 3 program and/or option buttons should be located one next to the other.
These keys are absolutely necessary to select all customer respectively service functions, such as setting of hardness!

• Available on certain models:

- 3-step start preset time with display via LED's LD6 to LD8 Die Zeitstufen betragen 3h - 6h - 9h
- LED display for salt
- LED-display for rinsing agent
- LED-Anzeige for END

• Functions which can be adjusted by the customer via the control panel:
(see description page B 11-13)

- Activation/deactivation of rinse-aid addition. Indicated by flashing of END-LED
- Activation/deactivation of rinse-aid addition. Indicated by flashing of END-LED

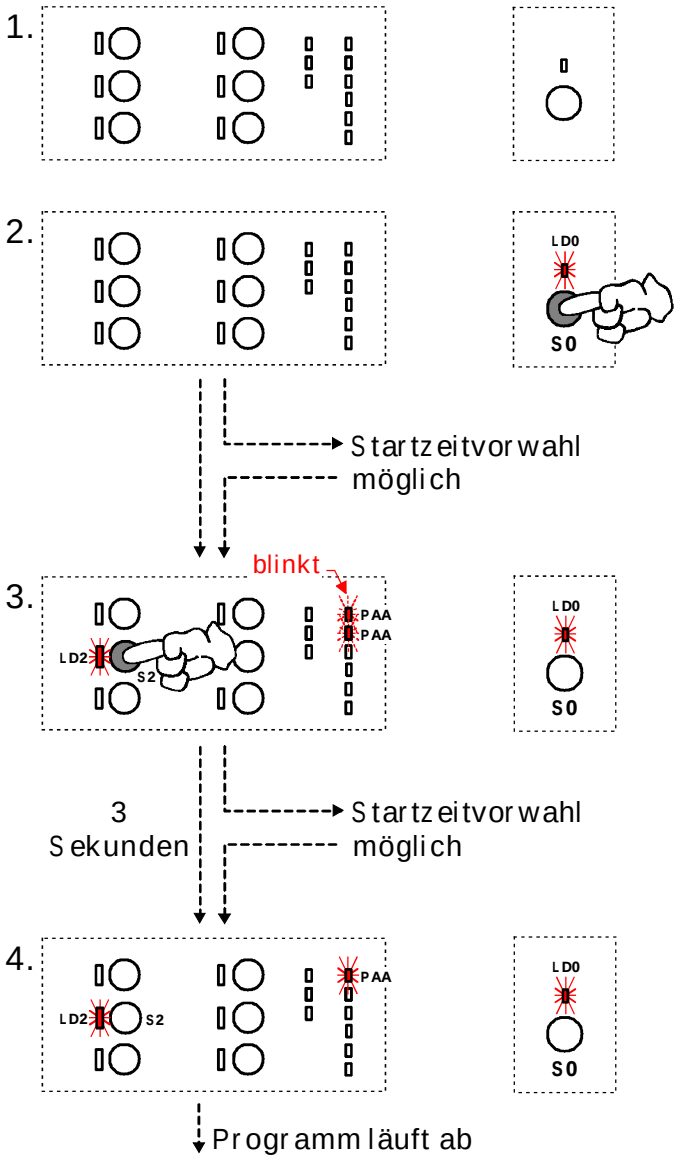
• Miscellaneous::

- Regeneration on demand
- Manufacturing test routine
- various customer support functions (error memory, individual actuator control, LED test)
- Rating of the appliance for max. energy label AAA
- optional with and without blower drying
- Aqua-Control-System in various models. Depending upon electrical and mechanical components and the associated programmation of the model

Available program options for selection:

- Start preset time
- Half load „small quantity" als Automatik oder mit Taste
- Additional rinsing cycle
- 3 in 1 (special tablet program)
- senitize

6.3 Input Philosophy: program selection



1. Appliance in switched-off condition

2. Switch on appliance with ON/OFF key S0
- Display LD0 with ON/OFF key is lit
- Appliance is in prestart mode
- All program keys and the SZV-key are enabled and can be selected

After the program selection it is also possible to select even possibly existing options.

Selection of start time possible

3. Program is set by pressing the corresponding key
- LED of the corresponding program is lit.
- All PAA-LEDs pertaining to the program are flashing, but not the End-LED.

Within 3 sec the program can be switched or an option can be added.

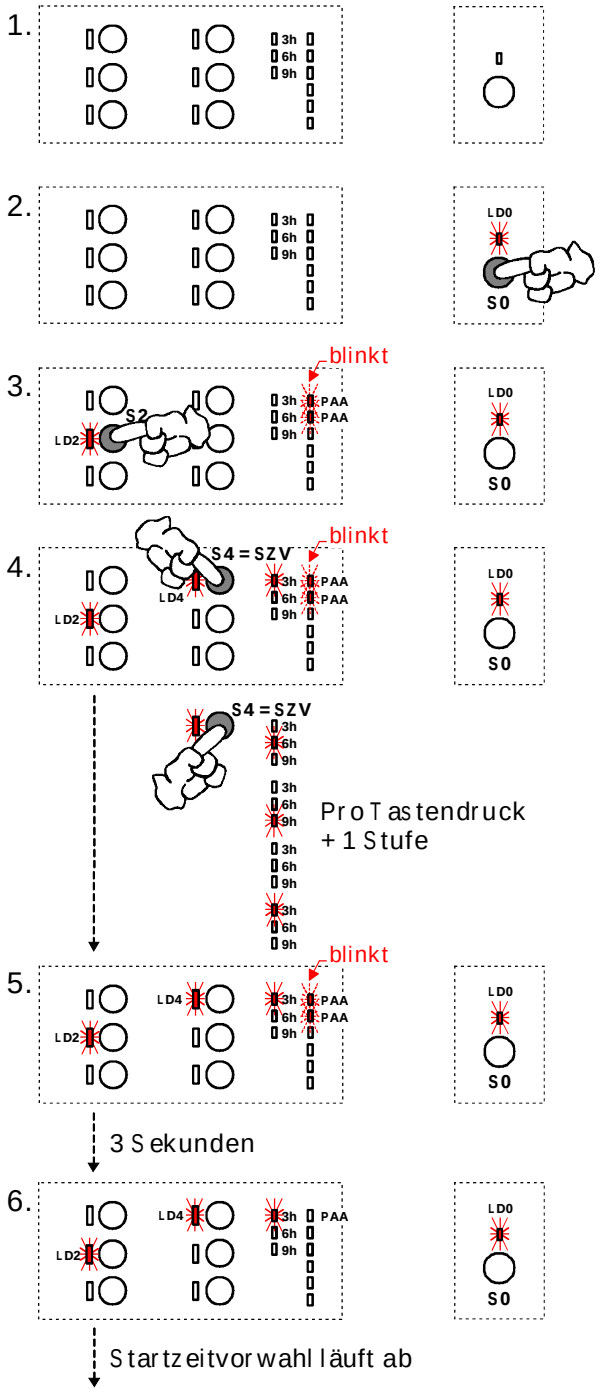
Automatic program start 3 seconds after the last key pressure.

- During these 3 seconds it is still possible to select a start time (see description „Input philosophy: start time preset“)

4. Program is running
- LED of the corresponding program is lit.
- The program flow LEDs (PAA) indicate the active subprogram.

Program starts only when the door has been closed!

6.4.1 **Input Philosophy: Start Time Preset**



Variant A

time preselection after program selection

Start time preselection gets active only when the door has been closed!

1. Appliance in switched-off condition

2. Switch on appliance by ON/OFF key S0.
- Display LD0 with ON/OFF key is lit.
- All program keys and the „SZV“ key are unlocked and can be selected.
(prestart mode).

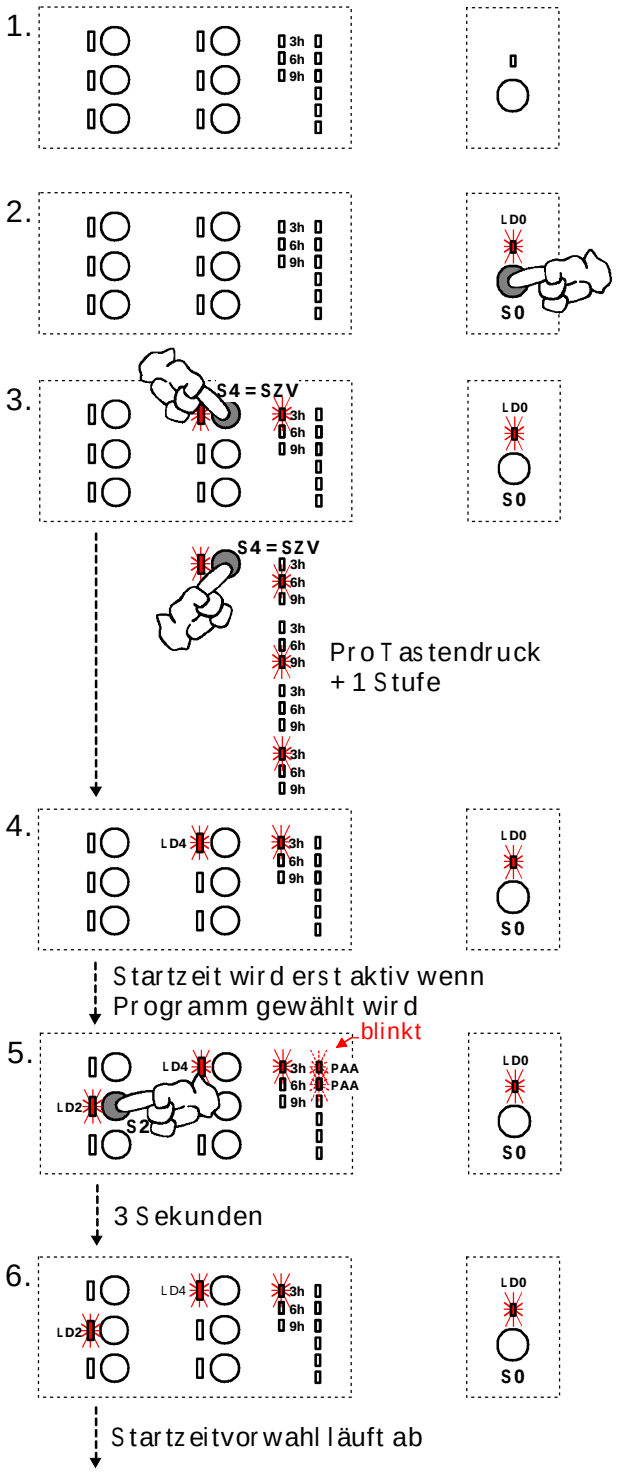
3. Select program by pressing the corresponding key.
- Corresponding program LED is lit.
- All corresponding PAA-LEDs are flashing (except End-LED)

4./5. Actuate start-time preselection key within 3 seconds.
- Program LED and „SZV“ LED are lit
- The SZV is indicated by the first time-LED being lit.
- All corresponding PAA-LEDs are flashing (except End-LED)

The start time is scrolling by 1 hour per additional key pressure
3h - 6h - 9h - SZV-LEDs off (SZV=Oh) - 3h - 6h -...

6. 3 seconds after actuating the „SZV“ key last the adjusted start time gets active and is running down.
- Program LED, „SZV“ LED and start time are lit in the display
- The PAA-LEDs go out while the start time is running down.

6.4.2 Input Philosophy: start time preset



Variant B

time preselection after program selection

Start time preselection gets active only when the door has been closed!

1. Appliance is in switched-off condition.

2. Switch on appliance by ON/OFF key S0.
- Display LD0 with ON/OFF key is lit.
- All program keys and the „SZV“ key are unlocked an can be selected (prestart mode).

3. Press start time preset key
- SZV-LED is lit.

The SZV is indicated by the first time-LED being lit.

The start time is scrolling by 1 hour per additional key pressure

3h - 6h - 9h - SZV-LED's aus (SZV=Oh) - 3h - 6h -...

4. Indication of „SZV“ is flashing until a washing cycle has been selected additionally. The selected start time is not active!

5. Select program by pressing the corresponding key.
- Corresponding LEDs of program, run time and „SZV“ are lit
- All corresponding PAA-LEDs are flashing (except End-LED)

6. 3 seconds after actuating the „SZV“ key last the adjusted start time gets active and is running down.
- Program LED, „SZV“ LED and start time are lit in the display.
- The PAA-LEDs go out while the start time is running down.

6.5 **Input Philosophy: Program Run**

• Cycle start

3 sec after the last pushbutton operation or when the preset start time runs out, the rinsing program selected is started automatically.

Program starts only when the door has been closed!

A time preselection resp. a program option cannot be selected any more additionally from that moment.

-cancel resp. delete cycle (see description „Delete Cycle“)
- change resp. alter cycle (see description „Alter Cycle“)

• Cycle run

During program processing the On/Off-LDO and the LED of the selected rinsing program are on display.

The program flow LEDs (PAA) indicate the active subprogram.
The corresponding PAA LED is lit.

• Cycle end

The acknowledgment LED of the program key of the completed program and the On/Off-key remain lit.

The „end“ LED is lit in the cycle run display.

After reaching program stop, the executed program can be cleared by opening and closing the door. After closing the door, the machine will be automatically in „prestart“ mode, i.e. a new program could be selected immeddiately.

After opening the door, all indications on the panel are maintained so long as the machine remains switched on by means of the ON/OFF key SO.

In order to switch off the appliance completely you have to actuate the ON/OFF key S0. If this is the case, the run-down program is deleted. All displays go out.

6.6 Input Philosophy: Delete Program

You can clear a rinsing program selected or already started at any time.

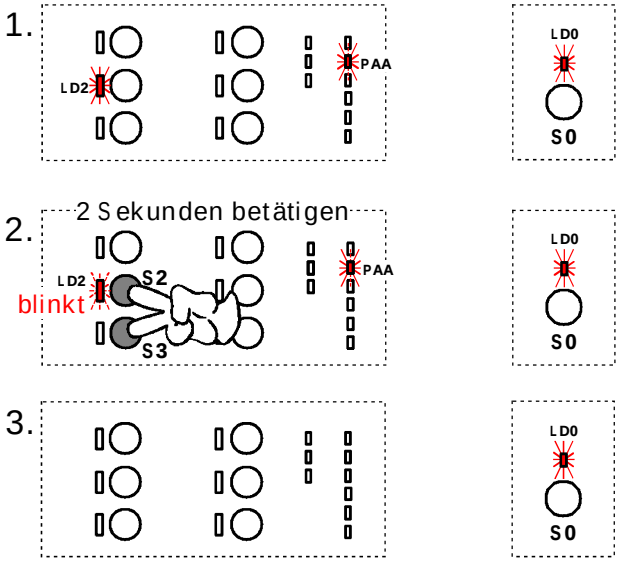
A selected or already started washing cycle can be deleted at any time during normal operation.

• Delete program (using the reset function)

Reset function always with they key S2 and S3.

1. Cycle running

2. Actuate reset keys S2 and S3 for about 2 seconds.
   - Display LDO with ON/OFF key and PAA-LED are still lit.
   - Display LED of running cycle starts flashing
3. After aprox. 2 seconds all displays except LED S0 of the ON/OFF key go out. The program is deleted.



6.7.1 Input Philosophy: Changing the Program

• Alter program during the prestart phase

1. Program has been selected but did not yet start
   - Display LD0 with ON/OFF key, program LED are lit.
   - Zusätzlich blinken die zum Programm gehörenden PAA-LED's (ausgenommen die Ende-LED).

2. By pressing the new desired program key shortly it is possible to alter directly..
   Options already selected before are cleared and have to be selected anew.
   - Display LD0 with ON/OFF key, new program LED and run time LED are lit.
   - Zusätzlich blinken die zum Programm gehörenden PAA-LED's (ausgenommen die Ende-LED).

3. Alterations can still be made within 3 seconds after actuating any key last.
If during these 3 seconds no more keys are actuated, the program will start.

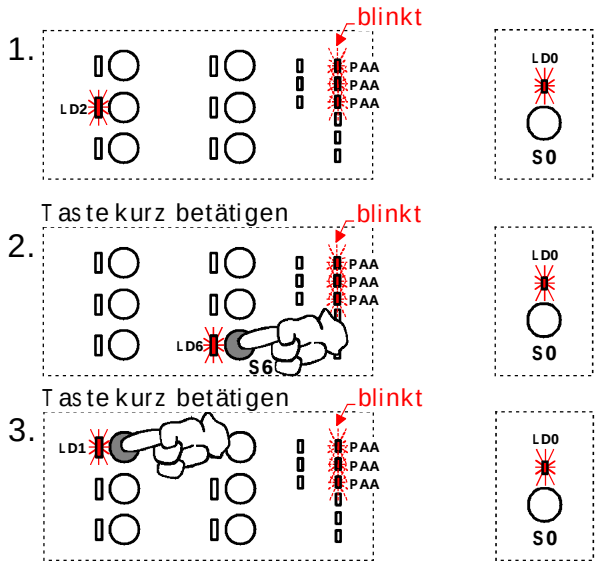
Program starts running only when the door has been closed.

- Special feature when also a start time was selected before!

1. Program and start time have been selected but did not yet start.
   - Display LD0 with ON/OFF key, program LED and "SZV" LED are lit.

2. Display LD0 with ON/OFF key, program LED and "SZV" LED are lit.The start-time preselection already selected is preserverd after the alteration! Program options already selected before, however, are deleted and must be selected anew.
Display LD0 with ON/OFF key, new program LED and "SZV" LED are lit.

If the selected start time is already running down you have to press the new desired program key a longer time for alteration (about 6 seconds).



6.7.2 Input philosophy: Changing the Program

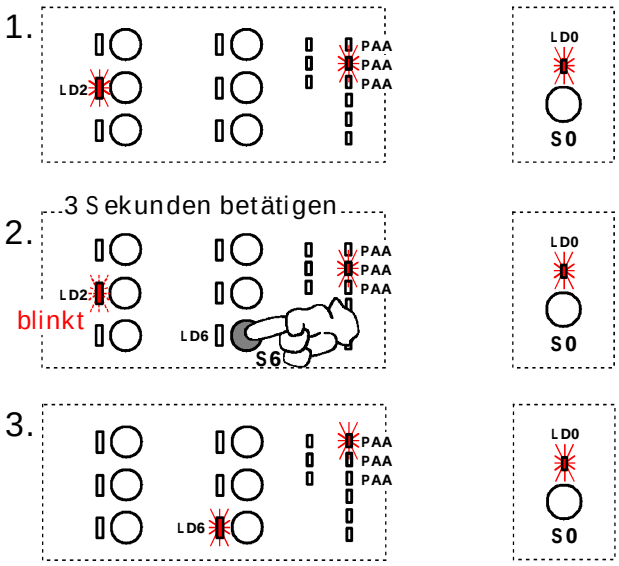
• Alter program after successful cycle start

1. Cycle running
   - Display LD0 with ON/OFF key, corresponding program LED and run time LED are lit.
   - The program flow LEDs (PAA) indicate the active subprogram.

2. Actuate key of the new desired program (in our example S6) for aprox. 3 seconds.
   - The displays remain the same as described under 1, but the LED of the current program cycle starts flashing.

3. After aprox. 6 seconds the previous program LED goes out and the program LED of the new
   - Display LD0 with ON/OFF key is lit.
   - The program flow LEDs (PAA) indicate the active subprogram.

If a program is altered after an already started cycle the new cycle starts generally from the beginning. Options already selected before will be deleted.



6.8 Input Philosophy - Interrupting the Program

• Interrupting the program

• You can interrupt the program for any period of time by use of the ON/OFF key S0.
The same is true for any interruption by opening the door.
• No clearing function is integrated into the ON/OFF key S0.
• Whenever the program is interrupted with the ON/OFF key, all indications go dark.
• After restarting by pressing the ON/OFF key or by opening the door, the program flow is continued at once without need to press any button.
nformation: The cycle is continued with a short time delay.
• All indications and acknowledgements appear in the same status as before the break

• What happens when opening and closing the door?

• Machine is switched ON and is in „prestart“ mode.

• After opening the door, all indications on the panel are maintained. Full power supply to the electronic system is ensured as long as the machine remains switched ON.

• The door is opened during a program in process.

• After opening, all displays on the panel are maintained so long as the machine remains switched on by means of the ON/OFF key S0.
• After closing the door, the machine immediately starts up, the program flow is continued.

Attention:

• When the 1st regeneration has been reached in the program part „drying“ the following is valid:

• When the door is open longer than 30 seconds, the program will be deleted. After closing the door, the appliance will be automatically again in the „prestart“ mode. A new program could be selected again immediately.

• Switching off the appliance by pressing the ON/OFF key s1 also deletes the current program from that moment.

(see description „input philosophy program selectionl“)

• What happens in case of resp. after a power failure?

• In case of power failure, the machine will behave in the same way as when switched off by pressing the ON/OFF key.
(siehe Beschreibung oben / unter „Programm unterbrechen“)
• When the power is back, the machine will behave in the same way as when switched on by pressing the ON/OFF key. The program is continued without transition at this place. No program losses will occur.
• You need not to press any key for the program to continue without transition after power failures.

6.9 **Input Philosophy - Displays**

All displays are designed as LED displays and are available depending on the appliance variant.

• Program selection and option displays

- Over or next to a proggram or option key, there is always a corresponding LED for acknowledging the selected function. They are continuously lit during the whole program flow.

• Display for preset start time (SZV)

- Start time preselection consists of a maximum of 3 stages and is given out by means of the 3 LED displays.
- The start time is counted down to 0 h in steps of hours.
- The possible start time setting is displayed scolling
  currently defined: 3h - 6h - 9h - Oh (SZV-LED off) - 3h - 6h - 9h -....
- When the start-time preselection has run down, all SZW-LEDs go out.

• Run time display (RLA)

- Generally not available at EDW1100 appliance variants.

• Information displays

- The position of the LED depends upon the model programming. It can be assigned to any LED not occupied with a program or option key.

These LEDs are permanently lit from switching the machine on by use of ON/OFF key until the moment of actual program start. These LEDs will also be lit after reaching program stop until the machine is switched off. The information LEDs will go dark during the entire program flow!

- LED display „salt“

-LED is lit in case of lack of salt
- LED goes out when salt has been refilled
  (Je nach Auflösung des Salzes kann es einige Zeit dauern, bis die LED erlischt).
Information: LED display salt goes out with hardness setting 1
(no regeneration necessary)

*** LED display „rinse-aid“**

- LED is lit in case of a lack of rinse-aid
- LED goes out after rinse-aid has been refilled

Hinweis: The rinse-aid addition can be deactivated completely by the customer, this also deactivates the LED display „rinse-aid“.
(see description „deactivation of rinse-aid addition“)

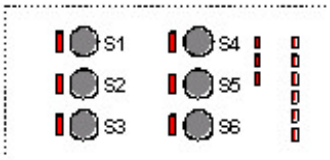
When the option 3 in 1 has been selected (special tablet option), neither the „salt“ LED nor the „rinse-aid“ LED is selected.

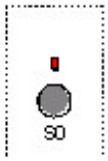
*** LED display „water“**

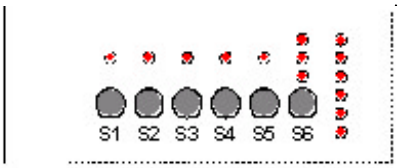
-LED is lit when there is no or too less water filling into the appliance. A reason for that could be, for example, a closed water tap.

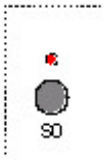
- The program is stopped and can be continued when the fault has been eleminated by actuating the program key.
  (see also description „Survey of fault displays - fault 10“)

6.10. **Summary of Service and Customer Support Functions**









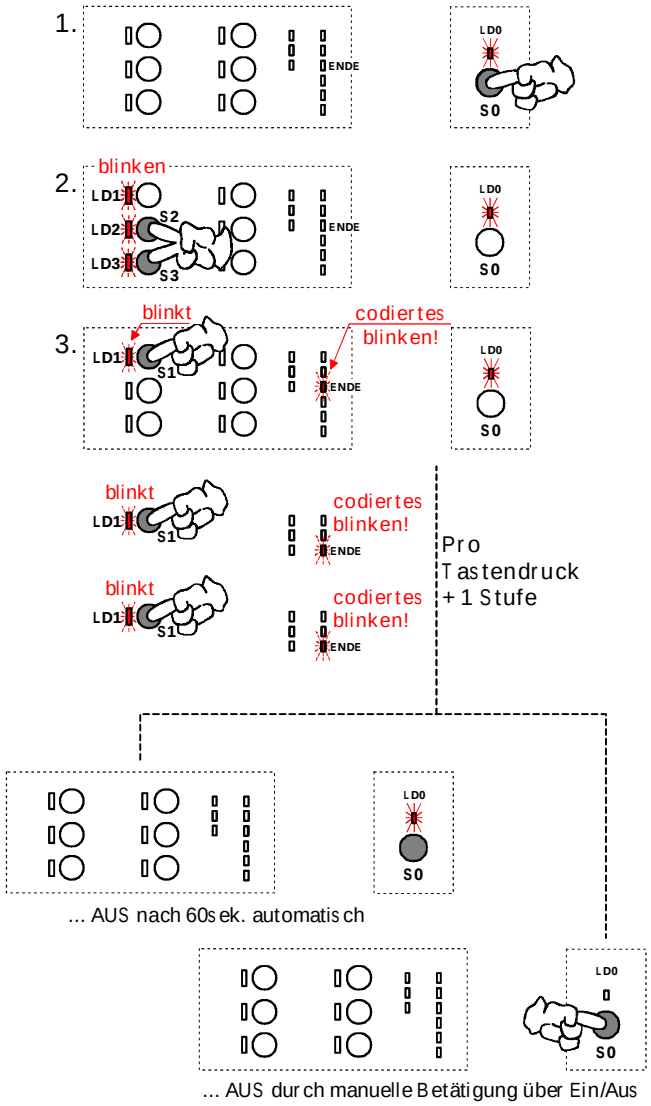
Who ?	Which Function ?	Selection of special mode customer or service			Confirmation of the special mode	Call of special function	Detailled description
Customer	Water hardness setting	→	switch on apliance with ON/OFF **S0**	→ Press **S2** and **S3** simultaneously and keep them pressed until ...	... LED's of keys **S1** - **S3** are flashing →	press key **S1**	see page **15**
	Switching off the rinsing agent display	→			→	press key **S2**	see page **16**
Customer Support	Readout of fault memory and single actuator selection	→	Press S1 and S3 simultaneously and switch on appliance with ON/OFF S0. Keep keys S1 and S3 pressed for another aprox. 4 seconds until ...		... LED's of keys **S1** - **S3** are flashing →	press key **S1**	see page **17**
	LED test with integrated deletion of the fault memory	→			→	press key **S2**	see page **18**
	manufacturing test routine	→			→	press key **S3**	see page **19**
	Disconnection Pulse Wash	→			→	press key **S2 + S3,** change with **S2**	see page **20**
	Additional Rinsing Process	→			→	press key **S1 + S3,** change with **S1**	see page **21**

6.11 Customer function / Setting of Water Hardness

General Information

• Setting and adjusting the water hardness range is identical with all designs and/or key arrangements.
• Always use the keys SO, S1. 52 and §3 independently of their model-related program assignment.
• Key S1 is ALWAYS the „Water hardness range key“
• In the works, hardness range value 4 has been preset
With setting „1“ no regeneration is usually carried out. No adding of salt is r
• Any Salt LED available will not be activated

Electronic and mechanical setting with the appliance:
Next to the „electronic“ setting on the control panel described at the right yo ay attention to the mechanical setting in the appliance by the 2-step blending switch.
(see table for hardness area values)



Anzeige Ende-LED	Einstellung der Härtestufe		Wasserhärte							Bemerkung
Anzahl blinken akustisch	elektronisch	mechanisch	in dH			in mmol/L			Bereich	
1 mal	1	0		bis	4		bis	0,7	I	kein Regenerieren
2 mal	2		4	bis	10	0,7	bis	1,8	I / II	
3 mal	3		11	bis	14	1,9	bis	2,5	II	
4 mal	4		15	bis	18	2,6	bis	3,2	III	
5 mal	5		19	bis	22	3,3	bis	3,9		
6 mal	6		23	bis	28	4,0	bis	5,0	IV	
7 mal	7	1	29	bis	36	5,1	bis	6,4		
8 mal	8		37	bis	42	6,5	bis	7,5		
9 mal	9		43	bis	50	7,6	bis	8,9		
10 mal	10		51	bis	70	9,0	bis	12,5		doppelt Regenerieren

Calling the function „set water hardness“
1. Switch on appliance by ON/OFF key S0.
2. Press keys S2 and S3 simultaneously until the confirmation LEDs LD1, LD2 and LD3 are flashing.
3. Press the key S1 in order to call the water hardness function.

The confirmation LED LD1 continues flashing, LEDs LD2 and LD3 go out. The hardness range you have set is displayed visually and acoustically, if any, by coded flashing of the END LED.

Changing the preset hardness
Press the key S1 to modify the hardness range. The value is increased in rotating manner.

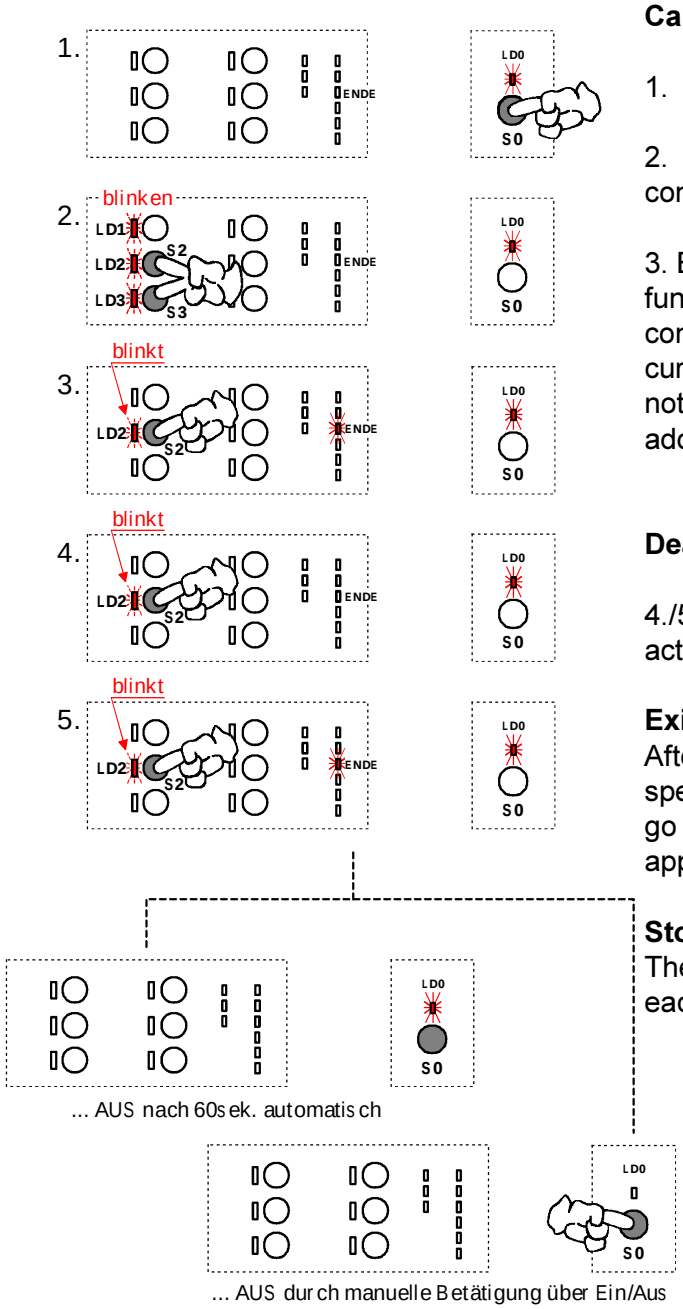
Exiting the function
Nach dem letzten Tastendruck auf die Funktionstaste S1 kann das Sonderprogramm wie folgt verlassen werden. Nach 60 Sekunden erlöschen alle Anzeigen, ausgenommen die LD0 der Ein/Aus-Taste automatisch - oder das Gerät wird mittels der Ein/Aus-Taste S0 abgeschälten,

Storage of the water hardness settings
The hardness range selection is stored immediately upon each single input.

6.12 Customer Function / Deactivation of rinse-aid addition:

General information
The function „Klarspülerabschaltung“ is not generally available and must be programmed in the software model.

- The deactivation resp. activation of the rinse-aid addition is executed in all designs resp. key arrangements analogously.
- Always use the keys S0, S1 and S2, independently of their model-related program assignment.
- **Key S2 is ALWAYS the „rinse-aid deactivation key“**
- The rinse-aid addition is always set active by the manufacturer
- If the rinse-aid addition is deactivated it means that no more rinse-aid is added via the detergent dispenser. Along with the deactivation, a variant-depending existing rinse-aid LED is also deactivated generally.



Calling the function „deactivate rinse-aid addition“

1. Switch on the appliance with ON/OFF key S0

2. Press keys S2 and S3 simultaneously until the confirmation LEDs LD1, LD2 and LD3 are flashing.

3. By actuating the function key S2 you now can call the function rinse-aid addition. The confirmation LED LD2 continues flashing, LEDs LD1 and LD3 go out. The current condition whether the rinse-aid addition is active or not is indicated by the „End“-LED. „End“-LED on=rinse aid addition on, „End“-LED off = rinse aid addition off

Deactivation resp. activation of rinse-aid addition:

4./5. By any further actuation of the function key S3 you activate resp. deactivate the addition alternating.

Exiting the function
After pressing the function key S1 last you can leave the special program as follows: After 60 seconds all displays go out automatically, except LD0 of the ON/OFF key or the appliance is switched off by ON/OFF key S0.

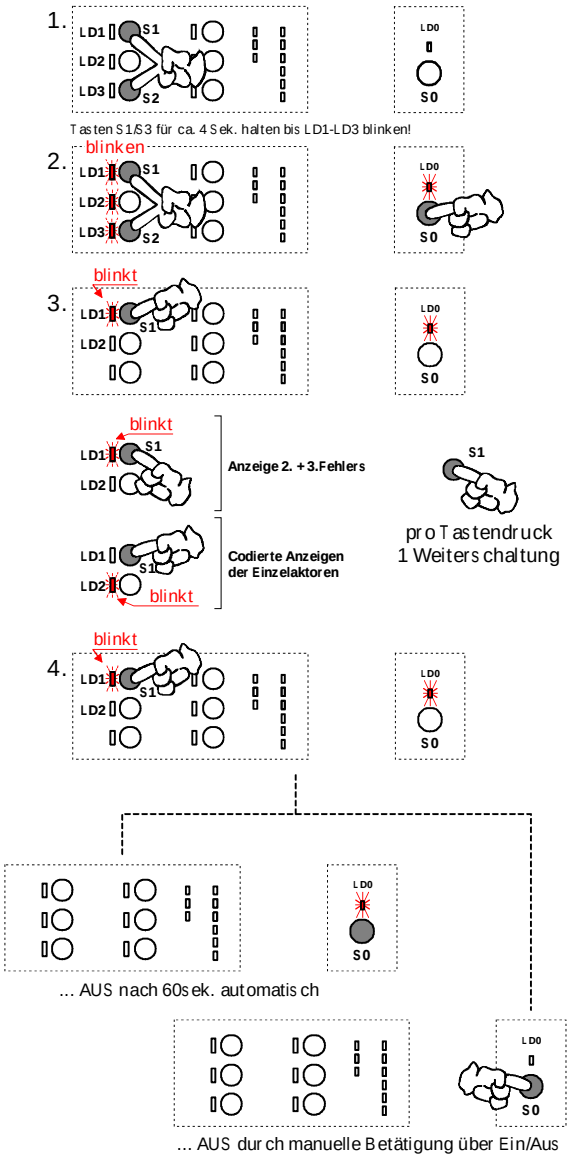
Storage of the water hardness settings
The hardness range selection is stored immediately upon each single input.

6.13 **Service Function / Readout of fault memory and single actuator selection:**

General information

- Calling the service functions is executed in all designs resp. key arrangements analogously.
- For that you always have to use the keys S0, S1, S2 andS3 independent of their variant-depending program load.
- In the service function mode, key S1 is ALWAYS responsible for the function „readout of fault memory“ and „single actuator selection“.

It is generally valid:
For calling all service functions you always have first to actuate function keys S1 and S3 before switching on the appliance by ON/OFF switch S0!
The keys have to remain pressed about 4 seconds to activate the function.
This procedure is intentionally different to that for the customer functions.



Calling the functions „readout of fault memory“ and „single actuator selection“

1. Press keys S1 and S3 simultaneously an...

2. ... and switch on the appliance by ON/OFF switch S0. For that keep keys S1 and S3 pressed until the 3 confirmation LEDs LD1, LD2 and LD3 are flashing. (A temporary flashing up of LEDs is possible and is no fault!)

3./4. By actuating the function key S1 you can call the function. The confirmation LED LD1 continues flashing, LEDs LD2 and LD3 go out.
When you press S1 button for the first time, the first error is displayed in coded form by means of the END LED.
When S1 button is pressed the second and third time, you can read the second and third value of the error memory.
(see description “Overview of errors displayed”
As from the fourth time you press the S1 button, LED LD1 will go dark and LD2 starts flashing.
You can call the individual actuators one after the other now.

4. Actuation: selection of regeneration valve
5. Actuation: selection of drain pump
6. Actuation: selection of valve
   (filling to level - if already existing, no filling)
7. Actuation: selection of heating
   (only when level detected)
8. Actuation: selection of circulation pump
9. Actuation: selection of detergent dispenser
10. Actuation: selection of drying fan

All positions can be called scrolling as many times as one wants.

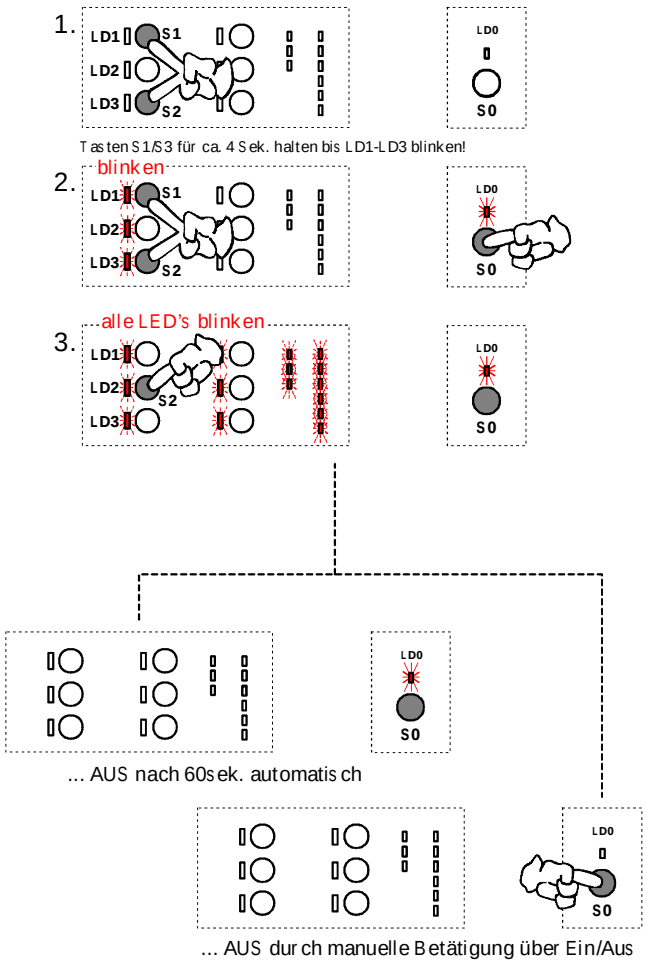
The several steps are switched onward manually by pressing any key. If the function key S1 is not pressed within 60 seconds, the service function is left automatically. Alle LED’s der Programm- und Optionstasten leuchten. Das Gerät befindet sich wieder im „Vorstart“-Modus.
It is also possible to leave the function by switching off the appliance by ON/OFF key S0.

6.14 Service Function / LED test with integrated deletion of the fault memory

General Information

* Calling the service functions is executed in all designs resp. key arrangements analogously.
* For that you always have to use the keys S0, S1, S2 and S3 independent of their variant-depending program load.
* In the service function mode, the key S2 is ALWAYS responsible for the function „LED test with integrated deletion of the fault memory“.

Generally is valid:
For calling all service functions you always have first to actuate the function keys S1 and S3 before switching on the appliance by ON/OFF switch S0!
The keys have to remain pressed about 4 seconds to activate the function.
This procedure is intentionally different to that for the customer functions.



„Calling the functions „LED test with integrated deletion of the fault memory“

1. Press keys S1 and S3 simultaneously and...

2. ... and switch on the appliance by ON/OFF switch S0. For that keep the keys S1 and S3 pressed simultaneously until the 3 confirmation LEDs LD1, LD2 and LD3 are flashing.
(A temporary flashing up of LEDs is possible and is no fault!)

3. By actuating the function key S2 you now can call the function.
All LEDs (except LD0) are flashing for about 30 seconds.

Leaving the function / deletion of the fault memory

All above-mentioned LEDs resp. the display have been flashing for about 30 seconds, the function is left automatically. Now the appliance is in the „prestart“ mode again. It is also possible to leave the function earlier by switching off the appliance by ON/OFF key S0.

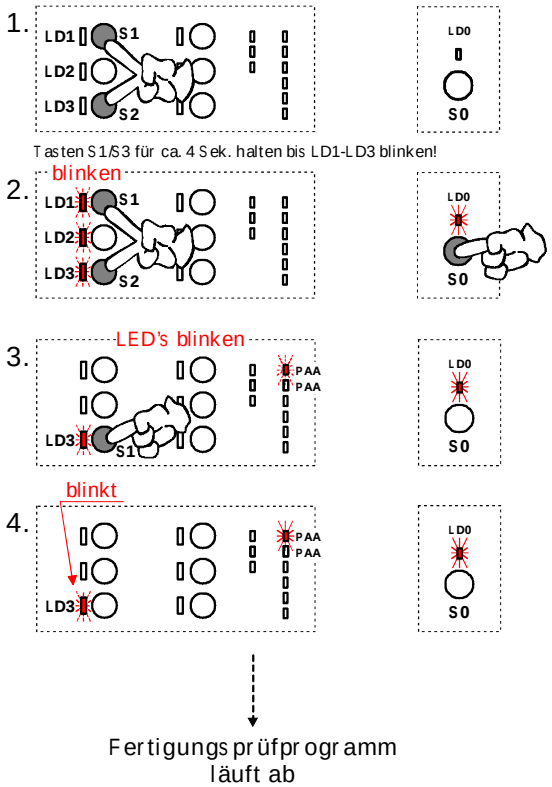
In any case the service fault memory is deleted.

6.15 **Service function / manufacturing test routine:**

General information

- Calling the service functions is executed in all designs resp. key arrangements analogously.
- For that you always have to use the keys S0, S1, S2 and S3 independent of their variant-depending program load.
- In the service function mode the key S3 is ALWAYS responsible for calling the „manufacturing test routine“.

It is generally valid:
For calling all service functions you always have first to actuate the function keys S1 and S3 before switching on the appliance by ON/OFF switch S0!
The keys have to remain pressed about 4 seconds to activate the function.
This procedure is intentionally different to that for the customer functions.



Calling the function „manufacturing test routine“

1. Press keys S1 and S3 simultaneously and ...

2. ... and switch on the appliance by ON/OFF switch S0. For that keep the keys S1 and S3 pressed simultaneously until the 3 confirmation LEDs LD1, LD3 and LD3 are flashing.

(A temporary flashing up of LEDs is possible and is no fault!)

3. By actuating the function key S3 you can call the manufacturing test routine. The key LED LD3 continues flashing, the LEDs LD1 and LD2 go out. The corresponding PAA LED will flash until the program starts automatically.

4. The test routine starts automatically.
The key-LED LD3 continues to flash, the corresponding PAA-LED is lit.

From that moment the same input philosophy is valid for the manufacturing test routine as for normal washing cycles

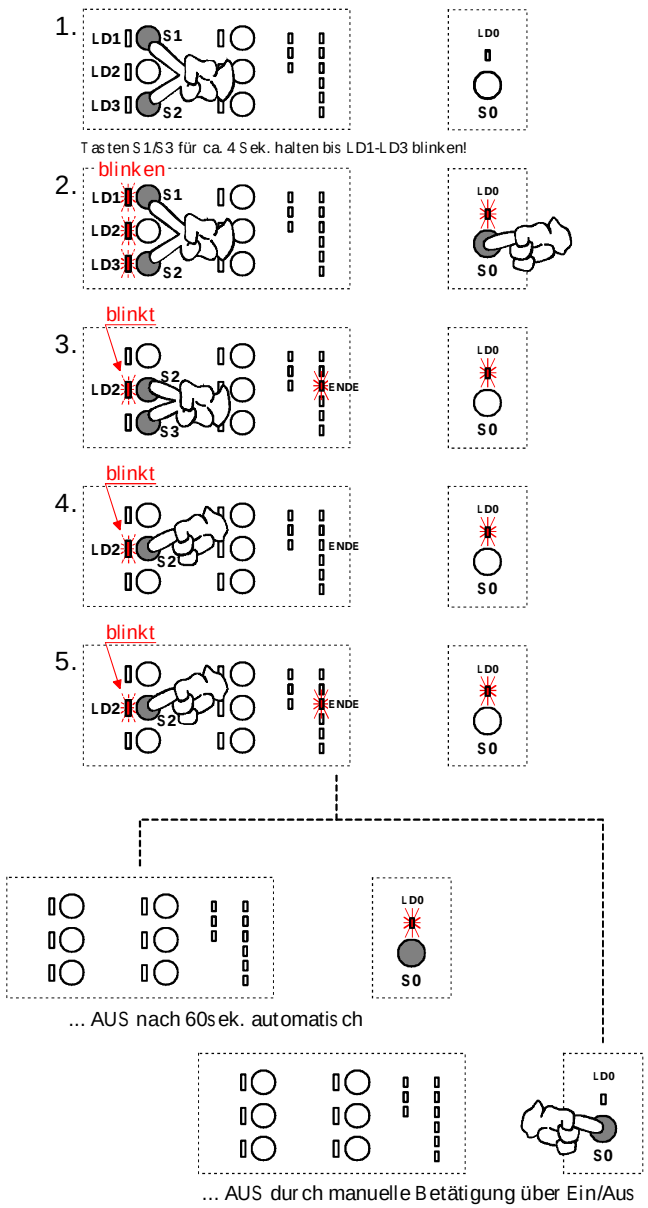
- cycle run and cycle end
  (see description page B 5)
- delete cycle in advance
  (see description page B 6)
- interrupt program
  (see description page B 8)

6.16 **Service function/ Disconnection Pulse Wash**

General information

- Calling the Service Functions is similar with all designs or key arrangements.
- Always use the keys S1, S2, S3 and S4 independently from their program assignment depending on the model.
-In service function mode, you can ALWAYS call the Pulse Wash function by using keys S2 and S3. Use key S2 to modify setting.
- From works settings, Pulse Wash is always set to be active.
- If you deselect Pulse Wash the rot.speeds of the circul. pump are always increased to „High Pulse Speed“. Water consumption slightly increases. Extension of time is possible depending on the temperature.

Always applicable:
In order to call the totality of service functions always first press the function keys S1 and S3 prior to switching the appliance on by means of ON/OFF switch S0!
Keep the keys pressed for about 4 seconds in order to activate the function. This procedure is intentionally distinguished from those for the customer functions.



Calling the function „Switch OFF Pulse Wash“

1. Simultaneously press S2 and S3 and...

2. ...switch on the appliance with ON/OFF switch S1. Keep keys S1 und S3 pressed simultaneously until the 3 acknowledging LEDs LD1. LD2 und LD3 are flashing. (Short-time illumination of LEDs is possible and does not constitute any fault)

3. Simultaneously press S2 and S3 until the acknowledging LED LD2 is flashing. LEDs LD1 and LD3 will go dark. The „End“-LED indicates whether Pulse Wash is activated or deactivated.
„End“-LED on = Pulse Wash on
„End“-LED off = Pulse Wash off.
Switching the Pulse Wash function on or off:

4./5. Any further activation of function key S2 will switch the addition alternately on or off.

Abandoning the function
After the last activation of function key S2 you can leave the special program as follows: After 60 seconds automatically all indications will go dark, except for the LD0 of the ON/OFF key
or
you switch the appliance off by means of ON/OFF key S0.

Saving the status settings
Immediately after each input of data, the currently valid status will be saved.

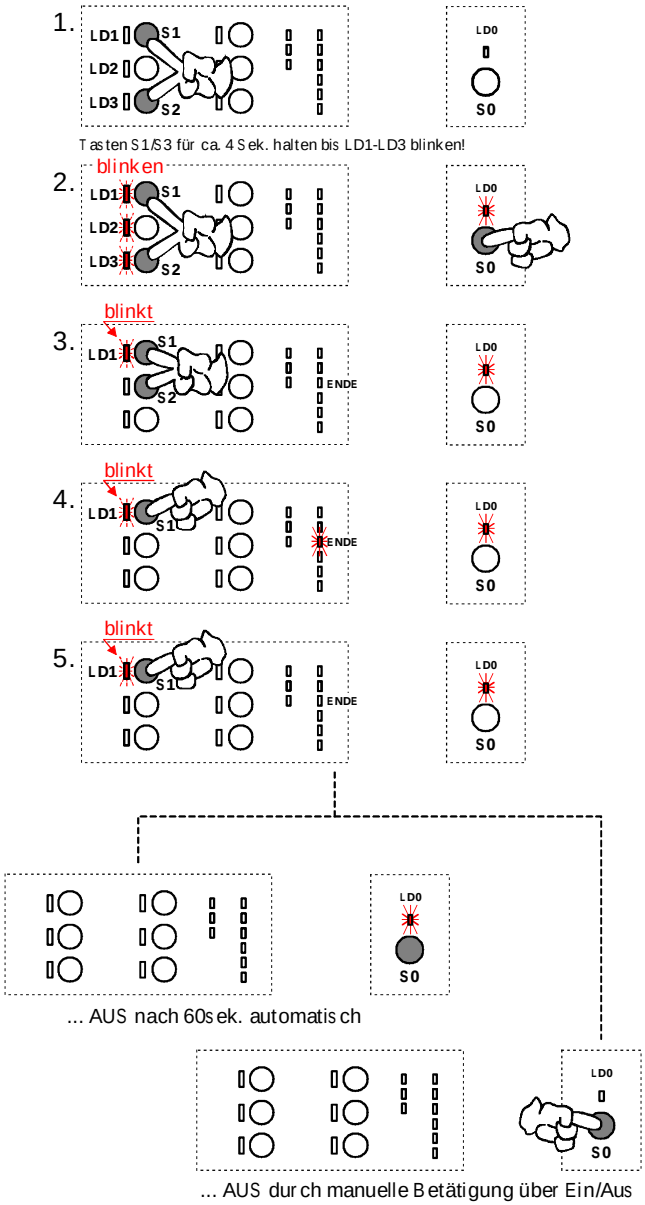
6.17 **Service Function / Additional Rinsing Process**

General information

- Calling the service functions is similar with all designs or key arrangements.
- Always use the keys SO. S1. S2 and S3 independently from their program assignment depending on the model.
- In service function mode, you can ALWAYS call „Selection of an Add. Wash Cycle“ with key combination S1 and S2.
  Use key S1 to modify the settings.
- From the works settings, no additional wash cycle is set.

- If this function is activated, an additional wash cycle is ALWAYS added, except for „prewash extra“.
  This will extend program run times up to about 10 minutes. This additional wash cycle will be executed until the function is deactivated again.

Always applicable:
In order to call the totality of service functions always first press the function keys S1 and S3 prior to switching the appliance on by means of ON/OFF switch S0!
Keep the keys pressed for about 4 seconds in order to activate the function. This procedure is intentionally distinguished from those for the customer functions.



Calling the function „Additional Wash Cycle“

1. Simultaneously press Sl und S3 and...
2. ... switch on the appliance with ON/OFF switch S0
Keep keys S1 und 83 pressed simultaneously until 3 acknowledging LEDs LD1. LD2 and LD3 are flashing
(Short-time illumination of LEDs is possible and does not constitute any fault)
3. Simultaneously press Sl and S2 until the acknowledging LED LD1 is flashing. LEDs LD2 and LD3 will go dark.
The „End“-LED indicates whether the Additional Rinsing Process is activated or deactivated.
„Ende“-LED an = zusätzl. Spülgang angewählt
„Ende“-LED aus = kein zusätzl. Spülgang

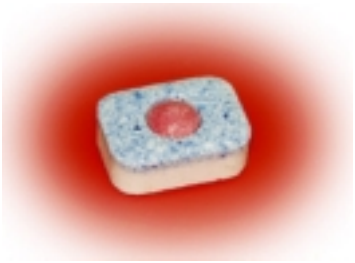
Switching this function on or off:
4./5. Any further activation of function key S1 will swith the addition alternately on or off.

Abandoning the function:
After the last activation of function key S1you can leave the special program as follows:
After 60 seconds automatically all indications will go dark, except for the LD0 of the ON/OFF key
or
you switch the appliance off by means of ON/OFF key S0.

Saving the status settings
Immediately after each input of data, the currently valid status will be saved.

6.18 The new options

• Selection by using option key " 3 in 1 "



General information

• If you add option „3 in 1“ to a wash cycle...

... water hardness setting is automatically adjusted to lowest grade (water hardness 1) device-internally.
There is no regeneration.
... LED salt is switched off
... rinse-aid dosing is switched off.
... LED rinse-aid is switched off.

To which programmes can you add this option?

- "3 in 1“ can be selected with all wash cycles, except for the two programmes
  ... prewash extra
  ... warm plates

What are the changes during the programme run?

- All short cycles (such as E-L-R,...) are prolonged by about 5 to 7 minutes.
- All intermediate wash cycles are also shorter.
- Rinse-aid is with at least 65°C or 68°C.
  Drying time is reduced by about 10 to 20 minutes if possible.
- All Energylabel programmes (AAx, BAB,...) contain at least one cleaning temperature of 55°C.

• Selection by using option key - „Satinize“

To which programmes can you add this option?

- "Sanitize" can be added to all wash cycles

What are the changes during the programme run?

- In the last wash cycle, heating up to 68^C and maintaining this temperature for at least 10 minutes.
- This brings about a longer programme run time depending on the programme and the temperature each.

Overview Errors Displayed

Applicable for EDW1500 / 1503 (VGA) -- EDW1100 / 1003 (VGA) -- EDW2000

Error Name	Display on Screen EDW 1500	Display by END LED 2Hz / 5sec. Pause EDW1100	Acoustic Indication No.of Beeps 2Hz / 5sec. Pause If available for this model	Error Display visible for Customer** Display PAA	 AK	Call Error Memory (Service) Display PAA	 AK	Output via Indicator Lamp If available for this model	Short Explanation	What happens?
Water tap closed	E10	1 x flashing	1 x	☺	☺	☺	☺	LED Water	Switchpoint of pressostat is not reached after max. 60 secs. (only in programme steps incl. Filling up to level!)	Programme stops and can be continued after error remedy by pressing the programme key. If fault is not corrected and programme key is pressed, the machine runs dry until next subprogramme.
Drain pump	E20	2 x flashing	2 x	☺	☺	☺	☺	---	Reset point of pressostat is not reached after max. 120secs. Programme stop.	Programme stops and can be continued after error remedy by pressing the programme key.
Aqua-Control	E30	3 x flashing	3 x	☺	☺	☺	☺	---	Aqua-Control System switches off solenoid directly.	Programme stops and restarts automatically when error has terminated.
Recycling pump Triac short-circuit	E50	5 x flashing	5 x	☺		☺	☺	---	Tacho signals are recognized although rec. pump is not selected.	Programme stops and water is filled up until reset point of pressostat
Heating	E60	6 x flashing	6 x			☺	☺	---	During heating, temperature rise by min. 1.5K is not detected within 3min.	Programme is continued until its end without heating function!
NTC Sensor	E70	7 x flashing	7 x			☺	☺	---	NTC short-circuit or break.	Programme is continued until its end without heating function!
EEPROM	E80	8 x flashing	8 x	☺ ?				---	Communication error with ext. EEPROM	
Check sum MCF / CCF	E90	9 x flashing	9 x			☺	☺	---	Check sum (model programming) MCF or Check sum CCF not OK. Only recognized after switching on!	Programme selection not possible. On/Off LED is on
Sprayarm blocked	EA0	10 x flashing	10 x		☺	☺	☺	LED Spray arm	At programme start and each subprogramme start, also after door open/close or mains failure, spray arm rotation is checked and evaluated.	Error display until sprayarm speed is recognized, or if no control.
Turpidity sensor	Eb0	11 x flashing	11 x			☺	☺	---	The turbidity signal required for calibration is not reached with 15secs.	Always recognition of turbidity. Programme sequence is adapted accordingly.
Communication error	EC0	12 x flashing	12 x			☺	☺	---	Communication failure with User Interface.	Machine stops, waiting until communication is cleared.
Tacho	Ed0	13 x flashing	13 x			☺	☺	---	Recycling pump selected, but no tacho signal recognized for 5 + 20 secs	Recycling pump without control, heating off. This function is checked again on each step.
Filling time error	EF0	15 x flashing	15 x			☺	☺	---	Time limit during filling exceeded	Programme is completed until next subprogramme without level. No further filling up of water top up. Error is reset after one complete drain cycle.

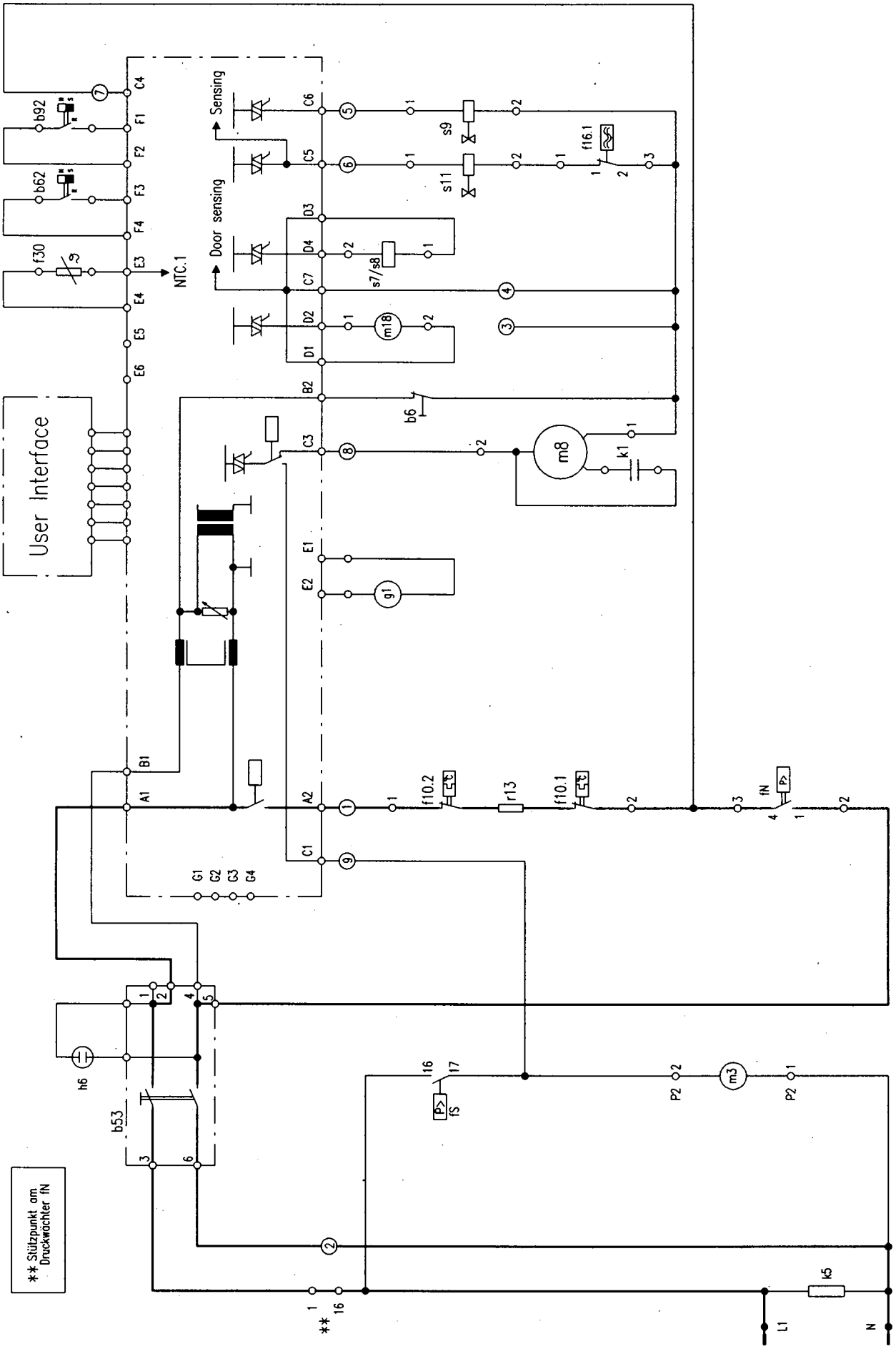
** = If 7-Segment display available, no PAA error display/Sound error display generally with VGA, with other machines depending on model

List of Possible Error Causes

Code	Possible error causes		
i10	No or not enough water let in		Water tap is closed or faulty No water pressure, pressure too low or changing Screen in front of inlet valve clogged Flow governor at inlet valve faulty Inlet valve faulty Inlet valve deenergized (faulty wiring or no activation by electronics) Inlet hose bent Softener system clogged (by filling detergent into salt compartment, for instance)
	Machine runs dry (Siphon effect)		Upright installation without upright assembly kit Connection height of the discharge hose is lower than 30cm above appliance base Connection w/o siphon or air chamber
	Water level inside appliance is not detected		Pressure controller faulty Pressure controller hose obstructed, bent or leaking Pressure controller wiring is faulty Screens in the appliance clogged (also check spray arm nozzles for clogging)
i20	Water is not pumped off		Fault with discharge pump Discharge pump deenergized (faulty wiring or no activation by electronics) Obstruction/blocking (filters in the appliance, discharge opening in discharge trough, discharge pump, discharge hose, siphon, cover plug at siphon connection not removed during first commissioning) Discharge hose bent or connection height above 100cm Ball valve in discharge trough glued / blocked (discharge pump does not aerate)
	Water level inside appliance is not detected		Pressure controller faulty Pressure controller hose obstructed or bent Insulation fault with heating element
i30	Water remains in base trough	Leakage	Leakage at recipient, discharge trough, hose system (e.g., Y-type hose), regeneration dosage etc.
		Overflow	Inlet valve faulty (does not close) Water inlet too high (faulty flow governor at inlet valve) Connecting hose regenerating dosing to discharge trough blocked Water inlet channels in regeneration dosing unit blocked Screens in the appliance clogged (also check spray arm nozzles for clogging) Pressure controller faulty Pressure controller hose obstructed, bent or leaking Pressure controller wiring is faulty Foam production in the appliance (splashed rinsing liquid / leaking dosing unit or con-compatible detergent / rinsing agent used)
	Base trough is dry		Inlet valve or wiring electrically interrupted
i50	Motor triac short-circuit		Faulty electronics
i60	No rise in temperature		Heating element faulty Heating element deenergized (faulty wiring or no activation by electronics)
i70	NTC signal faulty		Thermal sensor defect Wiring faulty (e.g. short-circuit or interruption)
i80	Check sum error EEPROM		Mains filter defect Faulty electronics EMC problem
i90	Check sum error model programmation		Faulty electronics
iA0	Upper spray arm does not rotate		Blocking by dishes or cutlery basket Nozzles clogged (drive nozzles at spray arm extremities) Spray arm leaking (welding seam) Spray arm bearing blocked (dirt, foreign bodies) Screens in the appliance clogged Bellows at connecting pipe not sealed at recipient rear wall (bellows not contacting/glued together) Circulating pump does not reach full power (nominal speed is not reached due to winding influence) Too little water in appliance - for possible causes see Error codes i10 and iF0 Foam production in the appliance (splashed rinsing liquid / leaking dosing unit or con-compatible detergent / rinsing agent used)
	No spray arm detection		No magnet in spray arm Spray arm detection sensor faulty Wiring faulty
ib0	turbidity signal faulty		turbidity sensor defect Wiring faulty turbidity sensor dirty Foam production in the appliance (splashed rinsing liquid / leaking dosing unit or con-compatible detergent / rinsing agent used)
ic0	communication faulty		Faulty electronics Wiring faulty
id0	Circulation pump no function		Circulating pump / capacitor defect Circulating pump deenergized (faulty wiring or no activation by electronics)
	No tacho signal recognized		Tachometer generator defect Wiring faulty
iF0	Time limit during filling exceeded		Problem with water inlet in general - see Error code i10, pipette effect in particular (also look for an error memory entry i10) Problem by incomplete pumping in previous program cycle (remaining water) - see Error code i20 (also look for an error memory entry i20) Improper loading, e.g. big item (pot, bowl is reversed and fills with water) Foam production in the appliance (splashed rinsing liquid / leaking dosing unit or con-compatible detergent / rinsing agent used)

7. Wirings

7.1 Electric circuit diagramm (example)



7.2 Wiring diagram (example)